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Original Articles

IMMEDIATE AFTER-TREATMENT OF PATIENTS OPERATED ON FOR CATARACT (WITHOUT BANDAGE).*

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The result of cataract operation is so frequently dependent on the skillful after-treatment of the case that the importance of this subject can not be overestimated. It is my purpose in considering it to limit whatever I have to say to the results I have had and the judgments I have formed from a fairly large experience, rather than to quote from literature the conclusions of others whose larger experience gives them claim to authority.

To begin, the after-treatment should be started before the operation by preparing the patient in much the same way as for operation under a general anesthetic. A thorough bath, shampoo of the head and cleansing of the face and field of operation are, of course, necessary, but, in addition to this, a complete emptying of the bowels by a good cathartic the night before and an enema on the morning of the operation is a practice that should be pursued in every case. This usually insures the bowels remaining closed for several days after the operation, which is desirable.

Patients who are restless or excitable, or who have an excessive nervous fear of the operation should receive a hypodermic injection of morphin, ¼ gr., together with 1/120 gr. of atropin about one hour before the extraction, unless for some reason it should be contraindicated.

The same remedy in smaller doses, or codein, may be administered some time after the operation if there is any excitability or tendency to coughing. This will aid also in keeping the bowels inactive for several days.

The dressing used after the operation should be of such a kind that it will keep the eyes closed. Personally, I do not see the *rationale* of the treatment of leaving the eyes open after such an extensive injury of the cornea as that made in the incision for cataract extraction.

Furthermore, both eyes should be closed for a time, for if one is left uncovered and the patient looks around, as he certainly will do, the operated one will move under the dressing much more than it should. This is avoided by placing the dressing over both eyes.

The kind of dressing used varies according to individual preference, and there is no fixed rule about this, except that it should accomplish the purpose of keeping the eyelids closed without exerting undue pressure on the globe. My own practice is to place a couple of layers of thin gauze moistened with boric acid solution or sterilized water over the closed lids; on this the pads of absorbent cotton are carefully arranged so that there may be no difference of thickness to make unequal pressure, and then the bandage applied as a figure of eight over the eyes and around the head.

In this connection, and thinking it may not be known to all, I want to mention the value of the moist netting bandage used at the Illinois Eye and Ear Infirmary, and which, so far as I know, originated there. It is made of a fairly good quality of mosquito netting, cut into strips about three inches wide and four or five yards long, rolled, and then sterilized with dry heat. Just before use it is moistened and applied as a starch bandage. There is just enough sizing in the fabric to make the layers adhere when it dries, and yet it is not as cumbersome or as irritating as the ordinary starch bandage. It is lighter and will keep its place better than the gauze or muslin bandage. The edges on the cheeks, nose and forehead may be stuck down with collodion, after the manner of my colleague, Dr. Beard, to prevent the patient from inserting his fingers beneath the dressing. Further protection can be given by some form of shield, either the wire shield of Fuchs, or, better in my judgment, the light but firm mask of Ring.

If the operation has been done on a table or chair the patient is not allowed to walk to the ward, but is placed on a stretcher or ambulance and taken to his bed. If a folded sheet has been placed under him on the table he can easily be lifted by this from the table to the cart and from that to the bed without his making any exertion or being disturbed. He is cautioned to lie quietly in bed and not to disturb the dressings. The room should be darkened. If there is much restlessness sedatives may be given.

If the patient disregards the injunction to keep the hands away from the face, they must be tied with a bandage to the sides of the bed so that he can move them but can not reach his face. If there is any doubt about the patient's self-control this precautionary treatment should not be neglected. The patient should be enjoined to lie quietly in bed, and particularly not to move the head about. This is not an easy thing to do, and the nurse or attendant must be ready to relieve discomfort by shifting his position slightly or partially turning him and supporting him with pillows.

The dressing is changed on the next day after the operation, this being done with the patient in bed, and with antiseptic precautions. It is exposing the patient to a needless risk to have him brought to the surgical dressing room in a hospital, even if he is transported on a stretcher. The edges of the lids are gently wiped with pledgets of cotton moistened with boric acid solution or sterilized water. Unless there is some evidence of conjunctival secretion or edema of lids or some indication of prolapse of the iris, such as pain, the eye is

* This paper, and those of Drs. Scales and Callan complete the Symposium on Cataract, which was read in the Section on Ophthalmology of the American Medical Association at the Fifty-eighth Annual Session, June, 1907. The discussion on the symposium appears under Section Discussions in this issue.

not opened at the first dressing. Should there be a suspicion that all is not well the eye may be carefully opened, after cleansing the edges of the lids, and the wound inspected.

The conjunctival sac is not irrigated unless there is evidence of infection or an undue secretion of mucus. I have found it better to abstain from cleansing the conjunctiva with any solution unless there is a positive indication for it, such as would be given by considerable secretion. However, a drop of 1 per cent. atropin solution may be instilled at this time and also at each subsequent dressing. Both eyes are bandaged as at first and the protective shield replaced. Each day the eyes are dressed in the same way, and, barring complications, nothing more is done than to wipe the edges of the lids and the surrounding parts of the face with moistened gauze or cotton, instil atropin and apply the dressing to both eyes.

At the end of the fourth day, if all is well, the unoperated eye may be left uncovered and the patient allowed to sit up, at least for part of the time. If the bowels have not moved, and usually the treatment before the operation and the light diet for the first two days after keep them closed, a laxative or an enema may be used at this time to induce a free movement.

If, at the end of the fifth day, it is clear that the wound is firmly healed, the bandage is left off entirely and the eye is covered with a dark shield so constructed that it will not touch the eyelids but will protect the eye entirely from the light. Such a shield can be made by cutting the Ring mask in two, trimming it so that it fits the contour of the nose and cheek and sewing on tapes with which to hold it in place. Or a shield can be made of light pasteboard or cardboard, shaping it in such a way by cutting out a narrow wedge-shaped piece from the upper edge, that it will stand away from the eye, and then blackening or covering it with some dark fabric. The purpose of this protective shield is to avoid the irritation that comes from keeping the eyelids closed with the gauze and cotton dressing under a bandage, and, therefore, no dressing should be placed under this shield to interfere with the motions of the eyeball or lids.

I have observed that my patients recover with less reaction and have less discomfort with this dressing than with the bandage. Naturally it would not be used until one was reasonably sure that there had been firm union of the wound. If there is no great reaction at the end of ten days the patient is allowed to accustom the eye to the light by taking off the shade for short intervals, and usually at the end of two or two and a half weeks he is ready for the discission of the capsule.

GENERAL TREATMENT, DIET, ETC.

As stated in the beginning, I think cataract cases should be prepared as for an operation of greater magnitude under narcosis. If the bowels are thoroughly emptied prior to the operation, and a light diet given for two days after, there is less danger of toxic substances absorbed from the intestines affecting the healing of the wound. Furthermore, the resulting constipation, which may even be favored in certain cases by hypodermic injection of morphin, is an advantage because many of these patients use the bed pan with difficulty, and any attempt to have them sit up may jeopardize the prompt healing of the wound.

By light diet I mean milk, weak broths, toasted bread or crackers, custards, certain cooked fruits—such as apples or peaches, and in rather small quantities; in other words, easily digested foods that leave very little residue. At the end of the second day full diet is usually allowed.

GENERAL COMPLICATIONS.

Many elderly people have bladder disturbances and can not void the urine while lying down. In the case of men this is frequently due to stricture of the urethra or the enlargement of the prostate, while in both sexes a spasm of the sphincter may prevent it. Such patients will probably require catheterization, and the physician should be prepared for it and instruct the nurse accordingly, so that for the first two days at least, the patient would not have to even turn on his side. In case of a difficult stricture it might be necessary to aspirate the bladder.

As said before, constipation, at least for a few days, is rather to be desired than dreaded. If the patient has not had a natural movement by the fourth day a laxative or an enema should be given, and after he is sitting up it is important that the bowels should move regularly. After the period of enforced constipation there may be irregularity, but this should, if possible, be corrected by diet and proper treatment.

Mania.—It should not be forgotten that in some elderly people there is a disposition to great mental excitability or even mania when both eyes are closed with a bandage. Many of the old people are childish, and, finding themselves in the dark and unable to see anything, are seized with terror or dread that is uncontrollable. The physician or attendant should be on his guard concerning this, for the patient might get out of bed and spoil the eye. In such cases it may be necessary to reassure the patient by removing the dressing from the sound eye, or he may have to be quieted with sedatives or hypnotics. I prefer to try this latter measure first, but frequently they are more quickly and effectively pacified by uncovering the healthy eye, and it may be better to do this than to run the risk of the other being injured by attempts to get out of bed.

Vomiting and Indigestion.—If the case has required a general anesthetic the vomiting after the operation may be annoying. Previous general preparation of the patient will do much to prevent this, but it should be checked as quickly as possible, if necessary with sedatives, so as not to jeopardize the eye which has been operated on.

Cough.—Cough is to be dreaded and should be promptly controlled for fear the wound will be opened by violent efforts. For this reason if the patient has a bronchitis or a considerable cough from any cause it would be best to postpone the operation until the diseased condition is relieved. If, however, after the operation the patient develops a cough, every reasonable effort should be made to relieve it. If the trouble is pharyngeal or laryngeal, sedative sprays may do good, sipping ice water or eating shaved ice will help. Bronchial cough may be controlled by heroin, codein, or, even if necessary, hypodermic injections of small doses of morphin until the patient has been tided over two or three days, when probably the wound will have healed.

LOCAL COMPLICATIONS.

Leakage of the Wound.—If the lips of the wound are not perfectly coapted the aqueous humor may drain away and the anterior chamber not reform for several days. This should be looked for at the first inspection of the eye, and if the anterior chamber appears shallow the eye should be dressed with the utmost care, so that there

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will be just enough pressure on the globe to insure immobility. The patient should also be cautioned against making any movement for fear of opening the wound. Such a condition would naturally delay the time when it would be safe to allow the patient to sit up.

Prolapse of the Iris.—This usually occurs as the result of some movement on the part of the patient or from coughing, sneezing or pressure on the eye. It is favored, of course, by an imperfectly coapted wound, and so might occur more readily after a faulty technic. It usually announces itself by more or less pain, which, if at all marked, is strong enough evidence to indicate immediate removal of the dressing. Sometimes, however, there is not much complaint of pain, and the prolapse is not discovered until the next regular dressing of the case. The sooner it is discovered the better. If the accident is very recent and the prolapse is slight, an attempt may be made, after thorough cocainization of the eye, to gently replace the prolapsed iris, but in most cases this will be unsuccessful and it must be excised. In doing this care should be taken to gently free the iris at the angles of the wound, so that when the prolapsed portion is excised, the rest will draw back into the anterior chamber. This may be facilitated by gently stroking the wound with a spatula. After cleansing the wound with mild irrigation, the dressing is reapplied and additional precaution taken to prevent a recurrence of the accident.

If prolapse occurs after an extraction by either the simple or combined method made with a large conjunctival flap, we frequently find that the conjunctival wound has held perfectly and the prolapsed iris is covered by the conjunctiva. If in such a case the knuckle of incarcerated iris is small I prefer to leave it rather than to remove its covering of conjunctiva and excise it, and so expose the eye to the additional risk of infection. A slight additional pressure of the bandage and dressing may help it to heal firmly.

An incarceration of the iris in a part of the wound without a prolapse would be treated similarly. In all cases of this kind, if seen recently, an attempt may be made to draw the iris away from the wound by eserin, but the continued use of this drug should not be practiced because of its liability in such cases to excite iritis.

Hemorrhage.—Hemorrhage into the anterior chamber or vitreous, either with or without partial opening of the wound, is a serious complication. It is usually the result of some trauma, but it may occur in persons with high arterial tension in whom the arteries of the eye are frail, and in such persons it may occur spontaneously or may be brought on by coughing, sneezing or straining at stool. If a thorough examination of the heart, arteries and kidneys is made prior to the operation the surgeon will be on his guard if a high arterial tension is present and there is evidence of hardened or rigid vessels.

In the treatment of this complication, additional precaution will be taken to keep the patient quiet and arterial tension will be lowered by nitroglycerin or other arterial sedatives, measures to promote flow of blood to the extremities and leeches to the temple to prevent further hemorrhage. The absorption of the blood in the eye should be encouraged by pilocarpin sweats, dionin and hot applications, although the latter should be used with great caution in these cases.

Infection.—Infection of the wound is the worst complication that can befall a cataract case, for unless promptly checked it is almost certain to result in loss of the eyeball or, failing this, in a plastic iridocyclitis that will obliterate vision. A suspicious grayness of the edge of the corneal flap is the first sign noticed, and usually by the second day this increases and the wound begins to gap. Chemosis and hypopyon appear. In the secretion from the conjunctiva, which may be scanty or considerable, one may usually but not always find germs of a virulent type, such as pneumococcus or some of the pus formers.

At the first sign of infection vigorous general and local treatment should be instituted. A brisk cathartic with calomel should be given. Liberal but easily digested food should be allowed, and such tonics or stimulants as will improve the general tone and increase the vital resistance should be prescribed. Quinin, strychnin and small doses of whisky might be mentioned.

Irrigation of the eye every few hours with boric acid solution or bichlorid of mercury solution, 1/6000, should be practiced. One should not neglect the cleansing of the lachrymal sac, particularly if there is any evidence of retained secretion there. Subconjunctival injections of physiologic salt solution or cyanid of mercury solution, 1/1000, may be tried. Hot applications, continued for fifteen or twenty minutes, should be applied three times a day. Local blood letting, by natural or artificial leeches applied to the temple, may be of some benefit.

In spite of all such measures, if the infection is a virulent one or the vital resistance is much lowered, the eye almost certainly will be lost and the question of evisceration or enucleation will come up.

Iridocyclitis.—The reaction that follows after cataract extraction is not always easy to explain. In some cases, where the operation has been done exceptionally well and every precaution used in the treatment, severe reaction will follow, while in others, in spite of accidents and complications, there will be so little disturbance as to be surprising to the surgeon. I am sure that I formerly had more reaction than was necessary by too zealously treating the eye with irrigation or continuing the bandaging for too long a time. Too early an exposure to the light is wrong and probably accounts for some of the cases of prolonged irritation and iridocyclitis.

But in addition to these more apparent reasons, such as local irritation of the eye of any kind, there must be some deeper underlying cause, which I am inclined to believe is of a toxic nature. This, acting on an eye whose resistance is more or less affected by the injury of an operation, in certain cases with a predisposition to uveitis, or in others already having uveal changes, might cause a severe irritation or even an iridocyclitis of a plastic nature.

In such cases the signs would vary from slight sensitiveness to light and lachrymation up to a severe reaction with ciliary pain and considerable plastic exudate. In these cases I have come to place considerable reliance on the administration of salicylic acid as proposed by Gifford, and I know of nothing that will more quickly influence the condition than large doses of this remedy, 20 grains of salicylate of soda every three hours.

In addition to this, active elimination by means of cathartics and diuretics is valuable, and in some cases I have had good results from the use of pilocarpin sweats, administering hypodermically 1/12 gr. of pilocarpin muriate at the time of the preparation of the patient for the sweat. Locally, hot applications, dionin, and subconjunctival injections of salt will tend to stimulate circulation in the inflamed eye and help to eliminate the toxic elements, whatever these may be.

The continuous use of atropin, in cases where there is unyielding adhesion of the iris to the capsule, will frequently keep up ciliary injection because of the dragging on the synechiæ. The division of the bands that prevent the free dilatation of the pupil and the free action of the iris will often correct this condition.

Vitreous Opacities.—In cases such as we have been considering, where there has been considerable reaction, one usually finds, on examination, evidences of the inflammation and of the causes that have brought it about, in the shape of vitreous opacities which more or less obscure the vision even after the needling. Among the different means for causing absorption of these I have found syrup of hydriodic acid in one-dram doses three times daily one of the most efficient and most easily tolerated of the iodin preparations.

In conclusion, much of the success in the management of the cataract case will depend on the skillful after-treatment, and of this too great emphasis can not be placed on the importance of general conditions and their appropriate treatment. Furthermore, much will depend on the previous preparation of the case to prevent both local and general complications. While every precaution should be taken and every possible care be stowed on the numerous details in the management of the case, it should be remembered that too much zeal in local applications may sometimes lead one into error.

IMMEDIATE AFTER-TREATMENT OF PATIENTS OPERATED ON FOR CATARACT (WITHOUT BANDAGE).*

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In view of the fact that the postoperative treatment of cataract cases depends to some extent on the technic of the operation, I consider that it will not be amiss to review briefly the technic, or rather a certain feature of the technic, which appeals to me as being most rational, and which in my hands has stood the test of experimentation. The point to which I refer is the construction of an ample conjunctival flap as the knife emerges from the incision, the employment of which seems to produce the most rapid resolution and recovery, minimizes the risk of infection, and at the same time obtains the best possible vision and the greatest comfort to patients during convalescence.

The great fundamental proposition which confronts the ophthalmic surgeon in the treatment of every cataract operation is how he may best prevent infection. This may be reduced to a minimim by a strict observance of the aseptic means at our disposal, with or without a bandage. It is a well-known fact that when the flap is employed the mucous membrane will reattach itself, under favorable conditions, in only a few hours, and it is also a logical deduction that a prompt reattachment is the most important requisite for producing aseptic healing. Since pathogenic bacteria have been proven to exist normally in the cul-de-sac, the secretions of the conjunctival sac being a culture medium for bacteria, and there being no effective means at our disposal by which we may rid the sac of these bacteria, it naturally follows that the prompter the union the less the risk of infection. The question whether or not we shall employ a bandage and at the same time be able to protect the eye from external injury during the after treatment of these cases, is one which has been agitating the minds of a few ophthalmic surgeons for some time. Suffice it to say that the majority of surgeons still adhere to the use of the bandage. I have long since discarded the bandage, save in exceptional cases in which there may be something out of the ordinary to demand it.

Why should we advise the non-use of the bandage? There are five essential reasons:

First.—The bandage interferes with natural drainage and brings about a retention of secretions which is to be avoided.

Second.—The bandage interferes with uniform pressure on the wound and ball of the eye, such as would be maintained by the natural position of the lid itself.

Third.—It creates a feeling of discomfort and restlessness, which interferes with the healing process in that it increases the involuntary mobility of the eye.

Fourth.—It is a factor in producing entropion of the lower lid, which in many cases is exceedingly difficult to avoid.

Method of using screen after cataract operation.

Fifth.—It is a factor in producing conjunctivitis, iritis and cyclitis, which will be shown later.

The necessity of bandaging is obviated by the use of a wire screen. This screen is constructed before the operation and made to conform to the bridge of the nose, the brow, the temporal and malar processes. It consists of a wire hoop rather quadrangular in shape and is bridged across with numerous wires forming meshes not large enough to admit the patient's fingers. The rim is cushioned on the proximal side with gauze to add to its comfort. The screen is bent into a concave shape that it may be amply out of the way of the lids and lashes. In adjusting it, it may be held in place by strips of adhesive plaster or by strips of gauze tied at the occiput. After the operation is completed the flap is smoothed into apposition, the retractors are removed and the lid is allowed to ease into its natural position. If we feel that the lid may not have fully recovered from the influence of the retractors, and that the lips of the wound may have been disarranged thereby, after a few moments the lid is gently raised to see that apposition

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is maintained. A single or double layer of moist bichlorid gauze is then placed over the eye and the screen adjusted. After six hours we have a right to presume that union is well established, so at this juncture the gauze is removed and the screen readjusted.

I allow my patients to sit up throughout their convalescence; the recumbent posture is conducive to a state of nervous restlessness, to say nothing of more aggravated symptoms, all of which concur to interfere with uneventful healing. These patients are more submissive and quiet when they are permitted to sit in a comfortable chair; however, they are forbidden to walk unguarded around the room for the first and second days.

This feature in the management of the convalescent stage is especially advantageous in those patients who, in a state of senility, are predisposed to hypostatic congestion of the lungs during rest in recumbent position, or what is equally as frequent, to chronic bronchial catarrh with cough, or to some bladder trouble.

Again, not infrequently we are confronted on the second or third day or later with the onset of iritis or cyclitis. Whether these complications are due to some non-pyogenic bacteria which have entered into the eye during or after the operation or to a chemical irritation, or what is more probable to the iris being encroached on by the jagged edges of the capsule or by some unremoved particles of lens substance, it matters not. As the eye is not a perfect sphere, being longer in its anteroposterior axis than any other, it is impossible for a bandage to be applied, no matter how carefully, so that it will not disturb the relation of the iris with that of the edges of the capsule or with some particles of the lens substance which may have been left, so long as the eye is permitted to move from one position to another. Certainly a mechanical irritation is more liable to set up under the constant disturbance of such relations than while the eye is undisturbed in its position under the natural influence of the lid only. In my experience the unbandaged freedom of the eye has seemed decidedly to hasten recovery and to minimize the complications.

In conclusion, I will relate briefly the history of one case, which will illustrate the treatment and the results which may be obtained by adopting the methods outlined in this paper. The deduction and conclusion at which I have arrived were not based alone on my own cases (except that of allowing the patient the pleasure of sitting up if desired), but on an ample observation while attending Professor Sattler's clinic at Leipsic in 1902; having obtained like results in seventy cases in my own practice subsequently, I have become a staunch advocate of the method here outlined.

A patient, aged 64, was operated on at 10 a. m. January 12. An iridectomy and also a conjunctival flap about 2 mm. in length was made, a double layer of wet bichlorid gauze was placed on the lid and the wire screen applied as shown in the accompanying illustration. At 6 p. m. I removed the dressing, instilled one drop of atropin and readjusted the screen, leaving off the gauze. The patient was put to bed. At 9 a. m. the next day the patient was allowed to sit up in a reclining chair as on the previous afternoon. On the third day the patient was allowed to move about in the room, the fourth day to walk about in the house, the fifth day to return home, seventy-five miles away. After five weeks the patient returned for refraction. Vision = 20/27. In two months vision = 20/25.

It is important to use a drop of atropin when first examining the eye after the operation. Every one who employs a bandage will admit that the early use of atropin is justifiable on account of the frequent occurrence of an iritis, for it is important to obtain a dilated pupil before redness of the eye takes place, or before any adhesions between the iris and the capsule, which, when set up, is often of from two to four weeks duration. These complications tend to produce an exudation which interferes with good vision, and are aggravated, if not produced, by the constantly disturbed relation of the iris with its adjacent parts during the movement of the eye when bandaged. If the eye is left protected by the lid and screen only, and atropin is used when the patient is first seen after the operation, such complications do not often occur, and if they do are very slight.

OPERATIONS FOR SECONDARY CATARACT.*

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The ideally perfect cataract extraction should consist of a method involving a minimum of risk, without sequelæ demanding subsequent interference to obtain good vision.

The extraction of the opaque lens within its capsule appeals to us all, but the consensus of opinion regards this operation as not safe as a routine method. Most ophthalmic surgeons extract cataracts without the capsule, leaving the latter to cause subsequent operative measures necessary in the majority of cases.

Various capsular forceps have been devised to obviate the formation of secondary cataracts. With the forceps the attempt is made to remove the anterior capsule within the area of the pupil, so as to secure a clear opening after the removal of the opaque lens. I have never been able to satisfy myself that the forceps had rendered subsequent secondary cataracts less numerous than when the cystotome had been used, but this may have been the fault of the operator. The percentage of secondary operations varies with the education and calling of the patients.

Taking the statistics of cataract extractions done in different ophthalmic hospitals for a given year, and the secondary operations done within the same period, it will be found that 50 per cent. require subsequent interference in order to get good vision. The majority of these patients are of the laboring class, who do not need very acute vision, so that if the statistics were gathered from an educated, intelligent class the percentage would be 75 per cent. The most expert operator, no matter how perfect the technic, using capsular forceps and washing out the débris, can not avoid secondary cataracts in the majority of his operations.

Secondary membranes or cataracts may be divided into simple and complicated. The former consists of a thin, diaphanous veil, which, owing to folds or rumpling of the anterior capsule, seriously interferes with good vision. The latter varies in degree from an opaque membrane within the pupillary area to the most dense mass which shuts off all communication between the chambers. The density of the membranes depends on the cortical lens matter left after the extraction, the cellular proliferation of the anterior capsule and the inflammatory deposit due to iritis, etc. In the complicated cases, we must add incarceration, prolapse of the iris and considerable loss of vitreous humor.

A secondary operation should not be performed until the eye has fully recovered from the effects of the cata-

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ract extraction. When the extraction has been performed *secundum artem*, with uneventful healing and no sequelæ, a period of six weeks is quite long enough to elapse prior to further interference, when necessary.

Not infrequently conditions are encountered in which the eye does not become perfectly free from inflammation and interference becomes imperative where delay would mean disaster. Dense exudate resulting from protracted iritis, completely occluding the pupil, preventing all communication between the chambers of the eye and extensive incarceration (or prolapse of iris) call for surgical relief. Otherwise the eye goes on to disintegration. Such conditions keep up the inflammatory process and the surgeon is forced to interfere sooner than would ordinarily appear justifiable. Operating under these conditions does not always give a permanent opening, but, even so, the traction on the iris is removed and some communication is secured between the two chambers, so that after complete quiescence does take place some visual power may be obtained by further operative measures.

There are three sources of danger in operating on secondary cataracts, as follows:

1. Infection.
2. Traumatism.
3. Relighting inflammation due to the extraction.

To my mind, the danger of infection is the least formidable of the three, provided the usual necessary aseptic technic is carefully observed.

Traumatism is usually due to the choice of the wrong procedure in securing an opening through the obstructing membrane. The objective point is a clear pupillary opening, and to secure this no method ought to be employed that simply depends on tearing. I firmly believe that most of our disasters following secondary operations are due to traumatism resulting from improper methods. We should never attempt to tear dense or tough obstructing membranes. Always cut them, inasmuch as the tearing means traction on the iris and ciliary processes, with glaucoma, or iridocyclitis, or panophthalmitis, as a result.

The chief danger is due to overhaste in operating before the eye has fully recovered from the effects of the cataract extraction. The eye is in the state of passive congestion and it takes but little to relight an active inflammatory process.

Not infrequently the surgeon is importuned by the patient to operate soon after the cataract extraction—he lives at a distance—he must return to work—he is anxious to see, etc. Further, as time goes on, the secondary membrane often becomes more dense. However, experience teaches us the wisdom of being patient until there is but little chance of reaction following the second operation, provided the correct method is chosen.

Chiselden was the first to make an artificial pupil, about 1728. He introduced a knife needle on the temporal side one and one-half lines from the clear cornea into the posterior chambers, pushed the point through the iris about one line to the outer side of pupil, carried the knife across the anterior chamber to inner angle and cut through iris to the original point of cutting, a sufficient distance to secure an opening. The iris on temporal side was permitted to remain intact up to the point of the knife-needle entrance into anterior chamber. This was done in cases of occluded pupil, following couching operations.

Gendron performed a corneal incision, having observed that a single line cut was not enough for visual purposes.

Baron Wenzel performed, instead of the straight-line incision, a flap, and removed a small piece of iris. To do this he introduced a pair of scissors into the anterior chamber.

Scarpa did an iridodialysis, and removed by cutting or tearing any capsular membrane within the area of the opening.

Professor Maunoir, of Geneva, in 1802, performed the first iridotomy. He used scissors with cutting blades fifteen to eighteen mm. long, one blade probe-pointed and the other sharp-pointed. The blades were bent forward near the joint 140 degrees. The closed scissors were entered through a corneal opening into the anterior chamber. They were then opened and slightly tilted with the sharp blade below. Then this was pushed through a suitable place in the iris tissue and the cut or cuts made as desired.

Various operators during the last century devised knife needles to operate on secondary membranes.

Bowman's method consists in the use of two needles and does not depend on cutting—it simply tears.

De Wecker, in 1873, devised his pince ciseaux, which is practically Maunoir's idea, only seventy years later.

At present there are three methods generally used in performing secondary cataracts, as follows:

The knife needle, preferably Knapp's, for thin membranes.
The narrow Graefe cataract knife for thick bands or dense pupillary deposits.
The forceps scissors for all cases when the knife is likely to cause dangerous traction.

The choice of an operative procedure must be entirely guided by the characteristics of the obstructing membrane. In dealing with a thin, diaphanous membrane —which, owing to wrinkled, crumpled or pleated surface, does not give satisfactory vision—we choose a knife needle and perform a discission. The knife needle must have a slight taper of the shank toward the handle to prevent the escape of aqueous; the cutting edge should have a convex surface six mm. long and not to exceed one mm. in breadth. The pupil ought to be fully dilated and the membrane cut within its area.

Enter the cornea at the upper or outer limbus with the needle and, as T-shaped incisions are to be made, cut the membrane entirely across its upper third. Then carry the needle down to the lowest margin of the pupil and cut upward to the center of the first incision. Two cuts are made—the first in the horizontal, the second in the vertical plane. If a conical form of opening is preferred the two incisions make a right angle at the center of the proposed pupil.

Frequently a tough or resilient band prevents either one of these discissions in the manner indicated. No attempt should be made to cut these obstructing bands with the knife needle, for they do not cut without exerting a dangerous amount of force on the iris and ciliary processes. Make the incisions in the point of the thin, clear membrane giving the largest clear surface.

It has been my fortune to have seen five cases where these tough, resilient bands caused glaucoma. Four of these cases were in my own practice. On two of them I had operated for cataracts and performed secondary operations and avoided cutting the tough bands. The first case became blind from glaucoma at the end of the second year following the last operation. The second had good sight for four and a half years, when she returned with a subacute attack of glaucoma, which lasted two

months. A free division of the band saved some sight. The third case was a needling of the right lens done in Russia to enable the young man to escape military duty. I saw him eighteen months after the needling and, as he did not wish to have any operation performed, nothing was done until two years later, when I found the eye blind T + 2—simple glaucoma. The fourth case was that of a young boy with a traumatic cataract, where four years after the injury the lens had absorbed and an attack of acute glaucoma set in. Another ophthalmic surgeon made an iridectomy upward, but this did not stop the process until I cut freely a tough, broad band that was exposed by the upward iridectomy. The fifth was Dr. Dwight Hunter's case, in which some months following a successful cataract operation the patient returned to the doctor with an acute attack of glaucoma, which rapidly disappeared after a broad band, which was stretched across the pupil, was severed by Dr. Hunter.

The full extent of the thickened capsular bands is very difficult to determine. Owing to iritic adhesions, full mydriasis is not possible. In none of these cases, however, was there either incarceration or prolapse of capsule, lens or iris, as far as I could see.

Looking this matter up I find that Priestley Smith has referred to a case in which a band from corneal cicatrix to ciliary processes caused glaucoma.

In my first two cases of glaucoma caused by capsular bands I failed to recognize the connection, but within a very short interval the third case presented in which an iridectomy had been made without benefit. The iridectomy showed a broad capsular band indicating evident tension, but in cutting this the severed ends immediately sprang apart. In other words, the conclusion was forced on me by the third case that the overlooked, apparently trivial, thickened capsule was the cause. How many of my previous cases of glaucoma were similarly caused I can not tell.

Bowman's method of operating on dense capsular membranes consisted in the use of two needles. The cornea is penetrated in the vertical or horizontal plane at the outer and inner third of its diameter. The point of each needle is gently pushed through the center of the proposed opening in the capsular mass. Then the handle of each needle is elevated and slowly approximated, splitting the thickened membrane. The immediate result is a vertical or horizontal opening through the secondary cataract, which subsequently is apt to become small. This operation by many authors is considered quite safe. They base their approval on the fact that by the use of the two needles the traction on the iris and ciliary processes is removed. This I deny, inasmuch as the operation is essentially a tear with the pull in the line of cleavage. The tougher the membrane the greater the pull on the iris, etc., exerted at right angles to the movement of the plane of the needles. In other words, to split the secondary cataract as the needle's points are separated, the opening is made at the expense of traction in the line of cleavage on the ciliary processes.

There is another method of operating on these dense secondary cataracts which is advocated at the present time by a number of able ophthalmic surgeons.

The cornea is penetrated near the limbus with a thin Graefe cataract knife, the cutting edge of which is directed to the iris and carried across the anterior chamber to the nasal side. The knife point is pushed through the iris into the vitreous humor and the iris and secondary membrane are cut toward the temporal side. In cutting an opening the knife handle must be elevated and the back of the blade is held in close contact with the cornea opening, which is to act as a fulcrum and prevent the escape of aqueous. The movement is of two kinds—either a sawing motion going more or less deeply into the vitreous, or a drawing of the cutting edge against the membrane. The thick dense membrane requires a sawing motion to cut an opening.

When there is a dilated pupil the iris is not cut, or in severing tough resilient bands across an otherwise gauze-like membrane the cutting is entirely confined to the secondary cataract. In many instances the pupil is too small and bound down, so that it is necessary to include the iris in the section, otherwise the opening will be too small. In performing this operation only one incision can be made at a sitting, and in case that cut does not retract its opening will not suffice and a second attempt must be made at some future time. The second incisions must be placed at right angles to the first in order to obtain a sufficient aperture. This operation is not entirely free from danger, due to the traction in cutting through the tough membrane.

Bearing in mind that all traction is to be avoided in cutting through secondary membranes, I know of no method quite so satisfactory in complicated cases as an iridotomy done with the forceps scissors. For the correct performance of this operation two instruments are essential—a narrow, bent keratome (Agnew's) and a forceps scissors. With the keratome an opening is made through the cornea and secondary cataract. The location of the corneal opening depends in the main on the iris. With a mobile intact iris it is necessary to make the corneal incisions 3 to 4 mm. from the limbus. This is especially the case in the young, as the iris quickly contracts after the withdrawal of the keratome and the loss of aqueous humor.

If an iridectomy was done at the time of the extraction the corneal opening may be placed at the limbus. In other words, the corneal opening should be so placed that after the scissors have passed through it into the anterior chamber they may be freely used without the heel of the scissors unnecessarily wounding the iris.

In operating with the scissors when there is a band or bands covering an otherwise gauze-like membrane dilate the pupils ad maximum. Cut the cornea with bent keratome 4 mm. from limbus, carrying the point through the thin secondary membrane 15 degrees below corneal section into vitreous humor. Move the point from side to side so as to enlarge the opening in membrane. Withdraw keratome and insert closed scissors into anterior chambers. Slightly tilt the blades and insert one behind the band or bands to be severed, and the scissors should be carried down to the lowest margin of the proposed pupil. The incisions do not include any iris tissue, but are confined to the secondary cataract within the area of the dilated pupil. It is well to bear in mind that the more extensive the incisions are made the greater the central aperture, which should be V-shaped. In case we have to deal with secondary cataracts complicated with extensive iritic adhesions where the pupil is contracted or occluded the iris tissue must be included in the incisions, otherwise there will not be secured an adequate opening for visual purposes. Place the corneal opening at upper limbus, incise iris as near the corneal incision as possible for free working of the forceps scissors within the anterior chamber. The iris opening should be enlarged laterally 5 mm., either by

keratome or scissors. Then with forceps scissors cut downward from middle of iris opening until the lowest border of sphincter is included. It is usually necessary to include the sphincter below the incision, otherwise the V-shaped opening is not large enough to serve as a permanent pupil.

In dealing with incarcerations or prolapse of iris the lateral incisions must be made with the forceps scissors and carried to inner and outer angles so as to free the iris from all traction. The downward vertical cut must be carried far enough through the sphincter and iris tissue to place the opening in normal position of pupil.

CONCLUSIONS.

Secondary membranes, consisting of capsule, gauze-like in texture, readily yield to a discission performed with the knife needle under artificial illumination.

Thin secondary membranes, consisting of one or more bands, require different handling. Simply avoiding these bands in performing a discission with the knife needle is a conservative course that gives a good visual result, followed, however, in some cases by subsequent disaster, due to the traction of the bands on ciliary processes.

Tough resilient bands can be disposed of successfully by the expert use of the thin Graefe knife in one operation by cutting at a right angle to their long axes. Thick, dense secondary membranes within the area of a fairly large pupil can be disposed of by the use of a Graefe knife in two operations, although I do not consider this the best course to pursue.

Bowman's two-needle operation for similar conditions, viz., dense, opaque membranes, covering a fairly large operation field, is mentioned merely to deprecate its use. The essential features of the method depends on tearing the dense membranes.

Judging by my experience in handling all forms of secondary cataracts, other than the thin diaphanous membranes, the forceps scissors affords the safest and most reliable of all instruments. By a judicious use of the De Wecker scissors the toughest membrane can be cut without any traction either on iris tissue or ciliary processes. In all complicated forms of secondary cataracts, occluded pupil, incarceration or prolapse of iris, it is the only instrument of which a proper use combines a minimum of risk with a maximum of benefit.

Do not tear secondary cataracts. Always cut them.

Disasters following secondary operations are in the main due to tearing methods in operating. The least danger is from infection.

[THE DISCUSSION ON THE SYMPOSIUM ON CATARACT APPEARS IN THIS ISSUE UNDER SECTION DISCUSSIONS.]

Hawaiian Fever.—According to Chief Quarantine Officer Cofer, malaria and Hawaiian fever are not one and the same disease. Indeed, Cofer states positively that malaria is never present in the Sandwich Islands unless imported, and he also asserts that the Anopheles mosquitoes have not been found there. Hawaiian fever is probably, he says, the result of heat, moisture and decaying vegetation. Its pathology is unknown. The onset is sudden with malaise and chill, followed by fever of a remittent type, the temperature ranging from 101 F. to 104 F. The spleen is enlarged and the liver engorged, and occasionally there is icterus. Headache, backache and constipation are accompaniments. Dr. George Herbert reports that in the treatment of this condition quinin is of no value, but the salicylates are of use. Removal from the location, such as going to sea, relieves all the symptoms in less than twelve hours. Dr. W. D. Baldwin believes Hawaiian fever is a mild typhoid or febricula.

THE PHYSIOLOGIC ACTION, ELIMINATION AND THERAPEUTIC APPLICATION OF SODIUM CACODYLATE, USED HYPODERMATICALLY.*

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According to Burlureaux,[1] the credit of the introduction of sodium cacodylate as a therapeutic agent belongs to Gautier, who on June 6, 1899, reported a series of observations in which he (Burlureaux) assisted. During the succeeding four years numberless enthusiastic, not to say extravagant, articles by European observers heralded the drug as a desirable substitute for metallic arsenic. On Jan. 31, 1903, however, T. R. Fraser[2] gave the drug, so far as English and American clinicians and authors are concerned, its *coup de grâce*, for, with but one or two exceptions, all English and American textbooks on materia medica deny the possibility of the drug, used hypodermatically, having either physiologic action or therapeutic value. In the article alluded to Fraser says:

"The . . . therapeutic effects of arsenic are caused by its pharmacologic action, and if it be so united with other bodies as to be incapable of producing any pharmacologic action or of inducing in large quantities the toxic effects, it can no longer be capable of producing the therapeutic effects in disease which are recognized effects of arsenic. If, therefore, the cacodylates are so inert that they may be given without producing any symptoms of the action of arsenic, it is because the arsenic has formed so firm and stable a union that no dissociating influence in the body is able to set free an arsenic ion from the combination. They are eliminated in such stable combinations that they fail to react to the tests for arsenates or yield arsenum when subjected to Marsh's test."

We are able to show that Fraser's reasoning is based on entirely false premises, for not only has it a distinct pharmacologic action (being decomposed in the body and eliminated in the form of arsenates by the urine, the feces, and probably by the sweat and the breath), and has a toxic effect, but the urine of patients under its influence yields arsenates and reacts to Marsh's test. It also gives many of the therapeutic effects common to the arsenic compounds.

The experimental part of this communication was undertaken with the view of explaining the cause of the many and excellent clinical results which have been obtained in the use of sodium cacodylate hypodermatically. An attempt was made to answer the following questions:

1. IN WHAT FORM DOES THE ARSENIC INJECTED AS SODIUM CACODYLATE BECOME ELIMINATED, AND WHAT IS THE QUANTITATIVE RELATION OF INJECTION TO EXCRETION?
2. WHAT ARE THE PATHS OF EXCRETION?
3. IS THERE A TOXIC DOSE?

In order to obtain an answer to the first question, as to the fate of the injected cacodylate, three patients

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* Sodium cacodylate, $NaAs(CH_3)_2O_2$, is the sodium salt of cacodylic acid, $HAs(CH_3)_2O_2$. Cacodylic acid is dimethyl-arsenic acid derived from arsenic acid, $AsO(OH)_3$, by replacing two hydroxyl groups by two methyl radicles, forming $AsO(CH_3)_2OH$, also written $HAs(CH_3)_2O_2$.

1. Cacodylates de Soude, Bull. Gén. de Thérapeutique, 1901, clxi, p. 524.

2. The Inefficiency of the Di-Sodic-Methyl-Arsenate as a Therapeutic Agent, The Lancet, 1903, vol. 154, p. 304-5.

were given daily hypodermatic injections of varying amounts, ranging from 0.05 gm. to 0.2 gm., and the urine examined daily.

During the time one patient was receiving 0.05 gm. for ten days no arsenic in any form could be detected in the urine.[3] Within twenty-four hours after commencing the second course the dose having been increased to 0.15 gm., a reaction for sodium cacodylate was obtained. Inorganic arsenic began to be eliminated after forty-four days from the commencement of the treatment, at which time the urine possessed a marked odor of garlic.

In the two other cases, in which 0.1 gm. was injected from the outset, the drug was detected on the thirty-sixth and tenth days, respectively. Inorganic arsenic could not be shown in the urine of the latter case, which was, however, under observance for only twenty-nine days. The first patient eliminated arsenic in inorganic form after twenty-two days.

Regarding the quantitative relation of the amount eliminated to that injected, our results agree in the main with those of Heffter,[4] who recovered in the urine but from one-seventh to one-ninth of the amount introduced hypodermatically. Apparently personal idiosyncrasy plays a very important part in this consideration, since in Case 3, under treatment twenty-nine days, the patient receiving daily from 0.1 gm. to 0.15 gm., only 1 per cent of the injected drug was eliminated unchanged and, as previously stated, no inorganic arsenic could be detected. On the other hand, in Case 2, with the same treatment, the daily amount eliminated varied from 5 to 8 per cent.

That these figures do not represent the true state of affairs in this connection must be evident from our results with animals. This point will be discussed later.

The question was further pursued in experiments on dogs. A detailed account of one such may serve as a type of all. Injection of 0.3 gm. of sodium cacodylate was given daily for nine days without any symptom of any objective sort. The compound was excreted on the second day and daily thereafter. On the tenth day the dose was increased to 0.5, and 1.0 gm. on the twelfth day and continued for five days subsequently. Inorganic arsenic made its appearance in the urine on the twelfth day. In a similar experiment, in which the doses were about three and one-half times the size of this one, the inorganic arsenic could be detected on the tenth day. The amount of daily elimination showed no direct relation to that of cacodylate injection. The excretion from day to day varied from 0.2 to 4 mg. In general, however, the larger quantities were eliminated during the periods of high dosage. The percentage of injected sodium cacodylate eliminated varied from 6 to 10 per cent. In all the animal experiments the injected quantity was distributed in from two to four different locations, in the attempt to determine if better results could be obtained in this way. This may explain why a lower percentage of the injected drug was eliminated. No macroscopic evidence of a pathologic change showed itself on autopsy of Dog 1. Portions of the liver, muscle and bone marrow were subjected to chemical analysis according to the method outlined by Heffter, *and in all three tissues inorganic arsenic was present.* Of especial importance was the finding in about 1 gram of marrow from the femur 0.3 mg. of arsenic in inorganic form. The liver showed approximately the same relative amounts with only traces in the muscle.

It occurred to us that perhaps the reason why such a small percentage of the drug could be detected in the urine after injection might be found in the fact of the elimination of the compound through the intestine in inorganic form. Ordinarily such a condition sets up intestinal changes of unpleasant character. In these experiments the feces were examined, and in all cases when inorganic arsenic began to appear in the urine it could be shown to be present in the feces also. Undoubtedly, therefore, the intestinal tract serves as a second means of exit for the inorganic arsenic formed from the cacodylate. This is only to be expected since the intestinal disturbances which follow the administration of inorganic arsenic subcutaneously are caused by the compound becoming excreted into the lumen of the intestine.

Since the injection of 3.0 gm. of the drug did not occasion any objective symptoms in the dog, it was determined to employ rabbits to show, if possible, whether or not a toxic dose could be obtained. A large rabbit, weighing 2800.0 gm. was given an injection of 1.0 gm. in the afternoon at four o'clock. The next morning the animal was found dead in the cage, but still warm. On section a very distinct odor of garlic was noticed, sufficient to be evident to persons entering the room. The tissues (liver and muscle) after removal from the animal retained the odor for several hours, or until they were subjected to chemical treatment. Arsenic in reduced form was, therefore, present in these organs. That the odor was due to inorganic arsenic was shown in the chemical analysis. Another rabbit, receiving 0.5 gm., showed no effect, nor did the urine possess any odor of garlic or cacodyl. The dose was increased on the succeeding day to 0.8 gm. The next morning this animal also was found dead, with the same results as with the one previously mentioned.

Our results, therefore, indicate that after the injection of sodium cacodylate from 6 to 10 per cent. is eliminated unchanged. Arsenic in inorganic form makes its appearance in the urine and feces in small but definite amounts if the injections are continued for any length of time. In general the larger the dose the sooner the arsenic shows itself in this form. Arsenic in inorganic form also is deposited in the tissues of the body after cacodylate injection. The body, therefore, possesses the power of decomposing the organic arsenic compound into an active inorganic form. The small amount of this produced at any one time allows of large dosage without toxic effect.

This cursory summary of the experimental work thus far accomplished forms sufficient basis, we think, for the following discussion of the problem from the experimental standpoint.

In the determination of the question as to the pharmacologic value of sodium cacodylate the all-important fact to be elucidated is the possibility of the drug becoming decomposed or reduced in the animal body to cacodyl, arsenious or arsenic acid. Cacodylic acid or any of its salts unquestionably is without any great effect pharmacologically. That they may occasion toxic symptoms, however, is asserted by Lebaln,[5] Schultz[6] and

3. Unfortunately, the value of the biologic test using penicillium brevicaule came to our notice too late to be taken advantage of, but we intend to employ this means of detecting in urine quantities of inorganic arsenic too small for ordinary chemical methods.

4. Heffter (A.): Des Verhalten der Kakodylsäure in Organismus, Archiv. f. Experimentelle Path., 1901, 46, 230-241.

5. Diss. Rostock, 1868.

6. Arch. f. exper. Path. u. Pharm., xi, p. 131.

Rabuteau.[7] Whether these symptoms are due to the appearance of cacodyl, which is extremely poisonous, or to the reduction of the arsenic to arsenious or arsenic acid was left undecided by those several investigators. It is currently supposed that whatever the effect of arsenic in therapeutic doses it is due to the presence of the $AsO^{2'''}$ or $AsO^{3'''}$ ion; in which case arsenic, combined with carbon in the so-called organic condition in which no such active ion exists, could not form a substitute for the inorganic arsenic unless it first suffered a reduction and decomposition in the tissues. That such a transformation may take place in the body is too well proven by previous observers, such as Heffter, Schmidt and Chouse[8] and others, it having been shown that surviving organs *in vitro* possessed the power of decomposing cacodylic acid to the oxid or even to cacodyl itself. Such experiments did not extend to testing the products for inorganic arsenic after such treatment. Our experiments are sufficient evidence, however, to settle this point.

That such large doses are necessary to produce an effect or to get toxic symptoms is undoubtedly due to the fact of the only partial decomposition of the compound to inorganic arsenic. The extreme tolerance is to be ascribed to a self-regulation and automatic immunity which the organism attains by the constant presence and new formation of arsenic of the inorganic type. The production of inorganic arsenic in the form of arsenious or arsenic acid in *nascent* state in the body is probably not an unimportant factor in the beneficial effects obtained in arsenic treatment of this character. In this condition smaller amounts of the ion become more active and induce better results than arsenic introduced as such *per os*.

Date.	per cent. Hemo.	Red.	White	per cent Poly.	per cent L. Mono.	per cent. S. Mono.	Eosin. per cent.	Dose.
March 7...	63	4,150,000	11,500	47.5	10	37.5	4.5	0.100 Gm.
March 13..	66	4,148,000	10,900	48.	12	36.5	3.5	0.100 Gm.
March 16..	75	4,200,000	11,000	49.	14	36.	1.	0.100 Gm.
March 22..	82	4,190,000	10,000	55.	18	26.	1.	0.100 Gm.
March 27..	86	4,300,000	10,500	57.	18	24.5	0.5	0.100 Gm.
April 3....	86	4,320,000	11,200	57.	19	23.	1.	Omitted.
April 6....	75	4,200,000	11,300	58.	20	20.	1.5	0.150 Gm.
April 10...	79	4,360,000	10,000	57.5	22	20.	0.5	0.150 Gm.
April 15...	85	4,250,000	9,800	58.	22	19.5	0.5	0.150 Gm.
April 18...	87	4,350,000	10,500	58.	23	18.	1.	0.150 Gm.

Simple anemia; blood examination made by Dr. J. Lewi Donhauser.

Date.	per cent. Hemo.	Red.	White.	per cent. Poly.	per cent. L. Mono.	per cent. S. Mono.	per cent Eosin.	Dose.
Feb. 21...	..	5,250,000	....	..	..	..	..	0.100 Gm.
Feb. 27...	..	5,240,000	6,200	58	10	30	2	0.100 Gm.
March 5...	85	5,090,000	9,800	58	5	35	2	0.150 Gm.
March 11..	100	6,125,000	8,600	67	1	32	0	Omitted.
March 16..	75	5,820,000	12,000	62	5	30	3	Omitted.
March 22..	90	6,300,000	8,200	55	8	37	0	0.200 Gm.
April 1....	85	4,440,000	6,200	62	7	30	1	0.200 Gm.
April 9....	90	4,200,000	10,400	..	..	..	..	0.200 Gm.
April 16...	..	5,600,000	18,000	77	6	14	3	0.200 Gm.
April 15...	..	5,600,000	18,000	77	6	14	3	0.200 Gm.

Neurosis; woman aged 73; blood examination made by Dr. J. F. Robinson, A.B. Other blood examinations from which this report is compiled were made by Drs. A. T. Laird, C. K. Winne, Jr., and M. C. Collier, Ph.B.

It is not, however, outside of the realm of possibility that cacodyl or its oxide, which is also unquestionably produced after this type of arsenic administration, does exert, itself, a distinct pharmacologic action specific for itself, and not unlike in general results that of inorganic arsenic compounds. This phase of the question we expect to take up as a further study.

The blood picture under the administration of the drug is a very constant one. In anemic cases there is always an increase in the percentage of hemoglobin, usually a small increase in red cells, but little variation in the number of whites, an increase in the percentage of polymorphonuclears and large mononuclears, with a corresponding decrease in the small mononuclears. In non-anemic cases there seems to be no relation in the changes of the hemoglobin or the red blood cells to the administration of the cacodylate, but there is usually an increase in the polymorphonuclears with but little change in the large or small mononuclears. The arterial pressure seems to be unaffected. The blood records in two cases, one of each type, will serve to illustrate:

In reporting the therapeutic results space does not permit giving detailed histories, but one case illustrates so forcibly the curative properties of the drug and the possibilities of large and long-continued dosage that it will be given in brief. In all instances in which the term "courses" is used it means ten days' treatment with an interval of non-treatment.

CASE 1.—Miss V. V., aged 22, cloak model, had lichen ruber.

History.—She had been treated for eczema at varying intervals. The intestinal tract would not tolerate any form of arsenic for more than ten days. She was much emaciated and decidedly anemic (hemoglobin 56 per cent.) and had amenorrhea.

Treatment.—Treatment with sodium cacodylate hypodermatically commenced Feb. 22, 1904, with 0.15 gm. once each day (this equals about 61.8 per cent. of arsenic trioxid or 0.093 gm.) for six days, when the dose was doubled. Six days later the dose was increased to 0.45 gm., and six days later to 0.6 gm. This dosage was continued for thirty-four days, when it was reduced to 0.3 gm. Four weeks later it was again reduced to 0.15 gm., and on June 15 to 0.05 gm. every other day for three weeks, when it was omitted for ten days and then resumed for three weeks more every other day.

Result.—The patient's appetite was improved in one week after commencing treatment. She menstruated on March 15, the first time in four months, and commenced to perspire on April 15, the first in several years. She was discharged, cured, on Aug. 4, 1904, after 164 days of treatment, having gained 25½ pounds, and she has never shown any signs of recurrence. She was given in all 41.95 gm. of sodium cacodylate, or what corresponds to 25.925 gm. of arsenic trioxid, or to 19.632 gm. of arsenic.

Three cases of psoriasis were treated. In one patient the disease was aggravated by its use and after six courses of 0.05 gm. the treatment was abandoned. Three others—one with a very severe attack—were permanently cured by four coures in one and three courses of 0.1 gm. in the others.

One patient with general eczema and one with palmar eczema were cured, the first with four courses of 0.15 gm. and the last with three courses of 0.1 gm., while a patient with eczema crurum was in no way benefited by doses as large as 0.3 gm.

Eight patients with simple anemia were successfully treated, none requiring larger doses than 0.15 gm., or more than three periods of ten days' treatment with ten days' interval.

Three patients with anemia with persistent headache were entirely cured; one of seven years' standing requiring six courses of treatment with 0.05 gm., improvement commencing during third course, and in one of six years' standing the patient was cured by four courses of 0.1 gm., improvement commencing on third day of treatment.

Three patients with splenic anemia were treated. One improved for a short time, but the cure was not permanent

7. Jahres. f. Thierchemie, xii, p. 96.
8. Moleschott's Untersuchungen, vi, p. 122.

and the patient died. In another case, of fifteen years' standing, the patient was cured by five courses of treatment with 0.15 gm., and the third patient, a case of fourteen and one-half years' standing, by the same. This patient has shown no sign of return after three years.

One patient with pernicious anemia died after eight days' treatment by a colleague, with doses of about 0.02 gm. A patient of Dr. Henry Hun, now under observation, in whom the anemia was accompanied by a persistent epistaxis of several years' standing, shows marked improvement, the fever, delirium, dyspnea, epistaxis and other disagreeable symptoms having disappeared, the hemoglobin having increased from 20 to 40 per cent., and the red cells from 1,032,000 to 2,400,000 in twenty-seven days with doses of 0.06 gm. for twelve days, 0.12 gm. for eight days, and 0.15 gm. for the balance, and at which doses the man is still being treated.

One patient with Hodgkin's disease died. This case was treated at our suggestion by a colleague, and no history is obtainable.

Two patients with neuritis with anemia were cured with 0.05 gm. doses, one after three courses of ten days, and the other after two courses. In another case, in which there was no associated anemia, there was no improvement.

Two patients with chorea were successfully treated by the administration of 0.1 gm. for two and three courses, respectively, one had been treated for some time with liquor potassii arsenitis, and, while benefited, was never cured, as the attacks recurred at three months intervals.

One patient with gastralgia of malarial origin was cured by two courses of 0.15 gm., and in two cases of exhaustion—both in women of more than 60 years, one following bronchitis and one following what was called diabetes—the patients were speedily helped to a complete recovery.

Of neuroses of various character, sixteen were treated, in only two cases more than 0.15 gm. being used. Five of these patients were not benefited, four were much helped and seven were cured.

Of forty-five cases reported then, thirty-four patients were either entirely cured or much benefited, eleven were in no way helped, and two were apparently made worse. In several of the second class the failure may be due to the fact that they were among the earlier cases treated, the dosage being very small and there being certain faults in technic. In these cases a French preparation sold in tubes, each containing a solution representing 0.05 gm., were used subcutaneously, with a short needle, the solution being cold. Later a sterile solution was made by dissolving the salt in distilled water. This, however, soon developed fungi, and on boiling gave off an alliaceous odor. Our present practice is to obtain the required amount of the salt, each dose enclosed in a gelatin capsule by the pharmacist; the drug is poured into the open end of a glass syringe, the plunger replaced and the syringe then filled with boiling water; the site of injection, preferably the buttock, is then washed with alcohol and a long needle is thrust deeply into the gluteal muscle and the warm solution injected. By this method little if any discomfort is complained of, and the warmth of the solution seems to add much to the rapidity of effect. Clinically it is usually noted that soon after injection there is a marked sense of exhilaration, and it is no unusual thing for a patient to come back after the cessation of a course and request a resumption of treatment on the ground that "it makes me feel so much better," a symptom common to arsenic medication.

Almost invariably the patient gains in weight, usually with considerable rapidity at first. In three of our cases a marked garlic-like odor to the breath was observed, in one this invariably coming on in half an hour after an injection of 0.05 gm. One patient reported the odor in the perspiration about a week after injections of 0.2 gm. commenced, and a complaint of a garlic odor to the urine is no infrequent occurrence. This odor may also be observed in inorganic arsenic medication.

Many of the French writers[1] state that unless improvement commences after five or six injections it is not worth while to continue, and if one course has not proved beneficial a second is not likely to. Our experience, however, is that rapidity of improvement depends much on the size of the dose, being slow with small doses and quick with large ones.

It would seem, therefore—if our data be accepted as correct—that Fraser and those who have accepted his statements have (as Fraser's paper seems to indicate) made their sweeping assertions as the result of a few clinical failures and not as the result of careful physiologic observation.

THE ACTION OF TOXIC DOSES OF ETHER AND THE INFLUENCE OF AMYL NITRITE THEREON.

WILLIAM MUEHLBERG, M.D.
AND
S. P. KRAMER, M.D.
CINCINNATI.

It is generally taught that ether is less toxic than chloroform, that it is less depressing in its action on the heart, and that the selective action of ether on the respiratory center is more manifest. A series of classroom experiments led us to doubt the truth of these views, and the present research was undertaken in the hope of clearing up, if possible, some of these questions. The following series of experiments were performed:

1. Ether was injected into the jugular vein, the blood pressure being recorded in the carotid artery, the vagus nerves being intact.
2. Ether was injected into the jugular vein, both vagi being cut.
3. Ether was injected into the carotid artery, the other carotid being used for recording the blood pressure, the vagi being intact.
4. Ether was injected into the carotid artery, the vagi being cut.
5. Ether was injected subcutaneously.
6. Chloroform was injected into the jugular vein, with the vagi intact.
7. Chloroform was injected into the jugular, the vagi being cut.
8. A mixture of ether and amyl nitrite (2 per cent.) was injected into the jugular vein, the vagi being intact.
9. A mixture of ether and amyl nitrite (2 per cent.) was injected into the jugular vein, the vagi being cut.

METHODS.

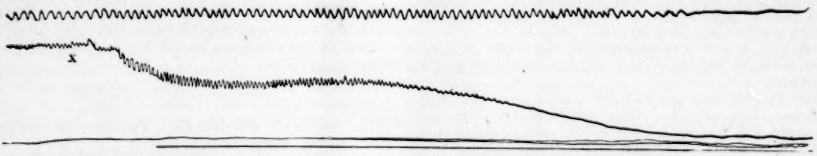
Rabbits were chosen for the experiments. Preliminary anesthesia with inhalation of ether was used, the cannulas, etc., introduced, and then the animal was permitted to recover from the anesthesia and the injections made. Our more important experiments were controlled without the preliminary inhalation of ether, so as to exclude the effects produced by a previous administration of the drug. These control experiments were identical in results with those obtained in the experiments in which we employed ether for primary anesthesia, and were not repeated for obvious reasons.

The blood pressure was recorded by means of a mercurial manometer connected with the carotid artery; although in some instances we controlled our experiments on account of the great fluctuation in blood pressure and the consequent entrance of magnesium sulphate

into the circulation by recording with a Hürthle manometer. The venous injections were made through a cannula inserted in the jugular vein. The respiratory movements were recorded by means of a Paul Bert drum stethograph connected with a Marey tambour. As a rule, tracheotomy was done so as to enable us to use artificial respiration with a bellows, if necessary.

SERIES I.

Injection of Ether into the Jugular, the Vagi Being Intact.—Within two seconds after the injection of 4 minims of ether in a rabbit weighing 3¾ pounds, as shown in Tracing 1, the blood pressure dropped markedly, accompanied by a slowing of the pulse rate; the pressure continued to sink until the heart stops beating in 40 seconds. The respirations at first were slightly weaker, but with the continued fall in blood pressure they became more rapid for a few seconds, still later slower, and finally stopped a few seconds after the cessation of the heart beats.



Tracing 1.—Top line, respiratory tracing; second line, heart tracing; third line, atmospheric pressure; X, time of injection; ether, m.iv, injected into jugular; vagi intact.

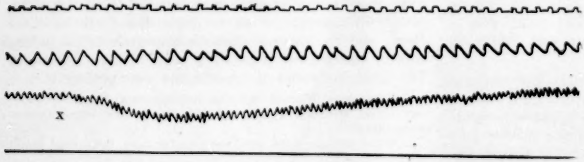
In a similar experiment with a smaller dose, though lethal, 2 minims, in a rabbit weighing 3½ pounds, the animal struggled, and finally ceased in about forty seconds after the injection. Artificial respiration failed to restore the activity of the respiratory center.

With a non-lethal dose under the same conditions, 1 minim in a rabbit weighing 4¾ pounds, the blood pressure sank very gradually, beginning about two seconds after the injection, continued lower for about a minute and a half and then gradually recovered, so that seven minutes after the injection it was restored almost to normal. The cardiac rhythm was slightly slower at the beginning of the period of the fall in pressure. The respirations were practically unaffected. The corneal reflexes were abolished.

SERIES II.

Injection of Ether into the Jugular Vein, the Vagi Being Cut.—With a large lethal dose, 5 minims in a rabbit weighing 5¼ pounds, the result was the same as in the experiments with vagi uncut, except that the slowing of the pulse was not manifest.

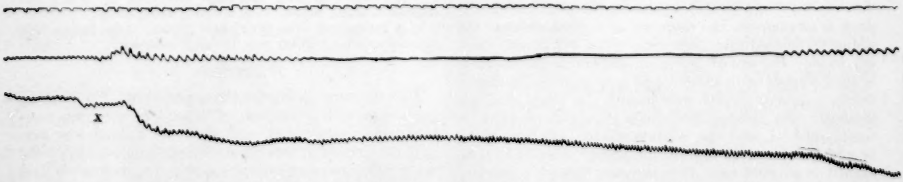
With a non-lethal dose, 1 minim in a rabbit weighing 3 pounds, the results were similar to those obtained with intact vagi, except that the recovery was much more rapid when the ether was injected into rabbits with cut vagi. The blood pressure recovered in about thirty-five seconds. This is shown in Tracing 2.



Tracing 2.—Top line, one-second intervals; second line, respiratory tracing; third line, heart tracing; fourth line, atmospheric pressure; X, time of injection; ether, m.i, injected into jugular; vagi cut.

SERIES III.

Injection of Ether into the Carotid Artery, the Vagi Being Intact.—The most typical reaction was a momentary rise of blood pressure, with struggling, followed by caused the blood pressure to sink two seconds after the injection with a slowing of the heart. This was followed by a partial recovery in about twelve seconds, to be followed by a slow secondary decline accompanied by irregular heart action and death in about four minutes, in spite of artificial respiration. The respiration became shallower and more rapid for a few seconds following the injection, then irregular and convulsive as marked fall in blood pressure, slowing of heart beat and diminution in respiratory rhythm, followed in about twenty seconds by a cessation of respirations. The fall in blood pressure and the slowing of the heart were apparently due to the stimulation of the vagus center. This is shown in Tracing 3, the record of an experiment on a rabbit weighing 4½ pounds with the injection of 1 minim of ether.



Tracing 3.—Top line, one-second intervals; second line, respiratory tracing; third line, heart tracing; time of injection; ether, m.i, injected into carotid; vagi intact.

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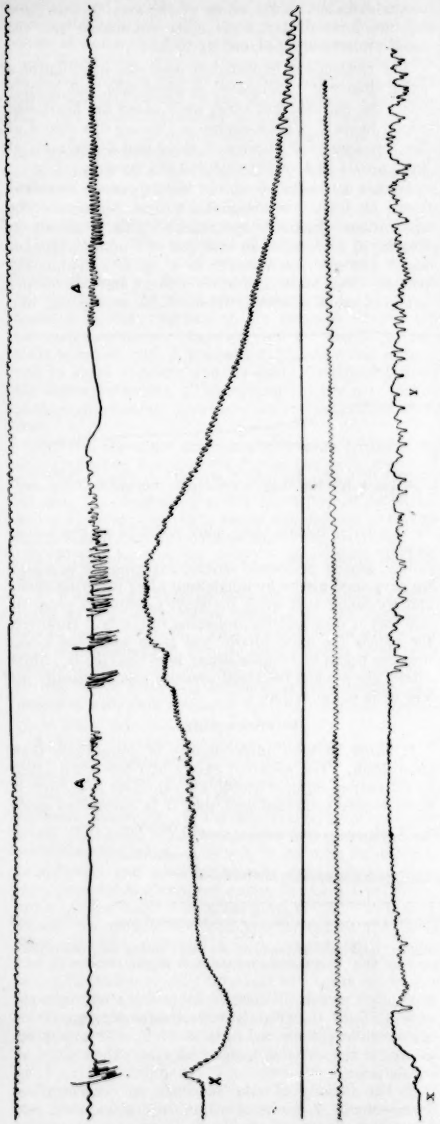


Tracing 4. Tracing 5.

Tracing 4.—Top line, one-second intervals; second line, respiratory tracing; third line, heart tracing; fourth line, atmospheric pressure; X, time of injection; A, artificial respiration; ether, m.i. injected into carotd; vagi intact.

Tracing 5.—Top line, respiratory tracing; second line, heart tracing; X, time of injection; Y, reflexes gone; ether, m.i. injected into carotid; vagi cut.

At times, as is shown by Tracing 4, the fall in blood pressure may be followed by a temporary rise of about 40 mm. to 50 mm. of mercury, to be succeeded in about fifty seconds by a rapid fall and death. The pulse rate was markedly lessened even during the period of the rise in blood pressure. Artificial respiration did not prevent the temporary elevation of the pressure, so that this effect could not be due to asphyxia. In those experiments showing the temporary increase in blood pressure, the respiratory center recovered its activity temporarily, but ceased with the subsequent fall.

Doses of 1 minim of ether injected into the carotid with intact vagi were usually fatal, even with very large rabbits. These were the only experiments in which we found so small a dose lethal, and we believe that the fatal results in these experiments were due to excessive stimulation of the vagus center. The corneal reflexes disappeared shortly after the injection. A most significant fact was the return of respiratory movements during the secondary elevation of blood pressure.

SERIES IV.

Injection of Ether into the Carotid Artery, the Vagus Nerves Being Divided.—The immediate effect of the injection of 1 or 2 minims of ether was struggling with spasmodic respiration which lasts about three seconds. This was succeeded by a great elevation in blood pressure which might go as high as 200 mm. The pulse was not appreciably slowed, although after the pressure had remained at this high level for some time the heart occasionally dropped a beat. The rise was not a temporary one; in one of our experiments it lasted for thirty minutes. The respirations were at first spasmodic, then became slightly slower and deeper. In no instance was there observed a cessation of respiratory movements during the elevation of pressure. The corneal reflexes disappeared shortly after the injection. A dose which was surely lethal with vagi intact did not kill when the vagi were divided. Tracing 5 is a record of such an experiment.

SERIES V.

Ether Subcutaneously.—The immediate effect of a subcutaneous injection of 3 minims of ether was struggling from the pain of the injection. This lasted only for a short time and was accompanied by fluctuations in the pressure and respirations due to the struggling of the animal. These soon returned to the normal.

Three injections of 20 minims of ether (which is about ten times the lethal dose when introduced into the jugular) at intervals of two minutes was followed by a general anesthesia as evidenced by the loss of corneal reflexes in about four minutes after the first injection. During the anesthesia, the blood pressure fell about 8 mm. and the respirations became slower and shallower. Ether could be detected plainly by its odor in the expired air. The anesthesia was of short duration, lasting about eight minutes.

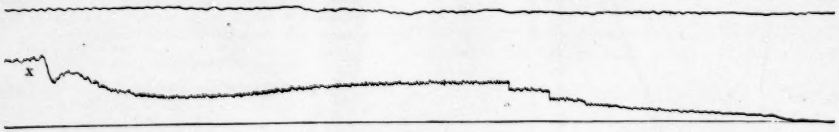
SERIES VI AND VII.

Chloroform Injected Intravenously or Intra-arterially.—These experiments gave curves almost identical with those obtained with ether. But there was this important difference: 1. Larger doses are required to produce the same effect. While a dose of 2 minims of ether was nearly always fatal in a rabbit weighing 3 pounds, when the injection was made into the jugular as much as 4 or 6 minims of chloroform was required. 2. Rabbits would tolerate repeated injections of non-lethal doses of

ether after intervals of about five minutes; but the action of chloroform was more accumulative. While 3 minims of chloroform were not fatal, an injection of the same amount five minutes later was followed by a more decided fall of pressure, etc., than that produced by the first injection, and 3 minims given five minutes later was nearly always fatal. Evidently the body excretes the ether much more rapidly, or, what also may be true, ether forms less stable combinations in the body than does chloroform.

It must be remembered that our method of injecting ether and chloroform was volumetric. Since chloroform has a specific gravity of about 1.526 at 0 C. and ether 0.736 at 0 C., we injected, in reality, twice as much chloroform as ether.

While engaged in our experiments, it occurred to us that some of the depressing effects of intravenous injections of ether might be due to ether-vapor embolism of the heart. Repeated examinations of the heart failed to reveal any bubbles in the right chambers. We also investigated the effect on blood pressure of temporarily occluding the second carotid artery. It might be held that the rise in blood pressure following intracarotid injection was due to anemia of the brain, incident to manipulating the second carotid. When the second carotid was clamped, the blood pressure, as a rule, was but slightly raised. At the most, an elevation of 10 mm. has been noted—too small to account for the enormous rise following intracarotid injection with cut vagi.



Tracing 6.—Top line, respiratory tracing; second line, heart tracing; third line, atmospheric pressure; X, time of injection; at A, B and C, one-minute intermissions were made in the record; ether and 2 per cent. amyl nitrite, m.iii, injected into jugular; vagi cut.

SERIES VIII.

Injection of a Mixture of Ether and 2 Per Cent. Amyl Nitrite into the Jugular, the Vagi Being Intact.—The normal. Later, as the effect of the amyl nitrite wore off, the force of the heart beats diminished and the blood pressure dropped, ending in death.

The respirations immediately after the injection of a lethal dose were diminished in amplitude, but quickly recovered and did not cease until after the heart had ceased to beat. This is shown in Tracing 6, a record of the injection of 3 minims of ether and 2 per cent. of amyl nitrite in a rabbit weighing 2¼ pounds.

With a non-lethal dose, the blood pressure recovered itself, at times exceeding the normal pressure. The respirations remained unchanged. This is shown in Tracing 7, a record of an injection of 3 minims of ether and 2 per cent. amyl nitrite in a rabbit weighing 3½ pounds. This amount of ether without amyl nitrite per pound of rabbit is usually fatal. With severed vagi and amyl nitrite, rabbits were most resistant to the action of ether.

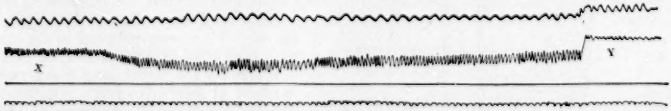
We likewise performed several experiments in which we gave amyl nitrite by inhalations after injecting ether, and we found that when the amyl nitrite was given in this way it exercised its protecting influence. However, the sooner the amyl nitrite was given after the blood pressure began to fall, the better were the results. Amyl nitrite given when the blood pressure was practically *nil* had little or no action.

CONCLUSIONS.

1. Ether injected intravenously is more toxic than chloroform. The apparent safety of ether when given by inhalation depends probably on the fact that ether is more loosely combined and that it is eliminated more promptly through the lungs. Ether has a boiling point of 35 C. to 37 C., which is below the temperature of the blood, while chloroform boils at 61 C. This may account for the lessened toxicity of ether when given by inhalation.

2. The toxicity of ether depends on concentration. Intravenously, 2 minims are fatal in medium-sized rabbits; as much as 1 dram may be given subcutaneously without lethal effects. By inhalations the toxic dose lies between these two extremes, although, no doubt, a large dose given by inhalation over an extended period of time is much less dangerous than a smaller dose entering the blood suddenly.

3. Ether kills in one of three ways: By, (a) direct



Tracing 7.—Top line, respiratory tracing; second line, heart tracing; third line, atmospheric pressure; fourth line, one-second intervals; X, time of injection; Y, reflexes present; ether and 2 per cent. amyl nitrite, m.iii, injected into jugular; vagi cut.

lethal dose required was slightly larger than with pure ether. The drop in blood pressure was less prompt in appearing, the respirations continued uninterrupted until the heart ceased to beat. The slowing of the heart's action was present, but it was much less marked than was the case with pure ether. The respirations appeared to be much less affected.

SERIES IX.

Injection of Ether and 2 Per Cent. Amyl Nitrite into the Jugular Vein, Both Vagi Being Cut.—Here the dose must be considerably increased to render it lethal. The primary drop of blood pressure was markedly less and was followed by a temporary recovery almost to

cardiac paralysis; (b) vagus stoppage of heart, or, (c) vasomotor paralysis. Respiratory paralysis can not be a cause of death if artificial respiration be maintained.

4. When ether is given intravenously it causes a fall in blood pressure due to the weakening of the heart's action and stimulation of the vagus center. The vagus influence can be removed by section of these nerves and partially by the use of atropin. But even with cut vagi the heart is depressed and the blood pressure falls.

5. Injected into the carotid artery, ether causes convulsions, probably due to the irritation of the motor centers in the brain; a fall in blood pressure, due to vagus center stimulation; anesthesia and often cessation of respiration. The stoppage of respiration is, in part, due to the fall of blood pressure and, in part, to the action of ether on the respiratory center, because when the pressure of the blood rises subsequently, as it sometimes does, the respirations are resumed during the temporary elevation. Injected into the carotid in animals with cut vagi, it produces convulsions and a great rise in blood pressure, due, no doubt, to stimulation of the vasomotor center. The respirations are not stopped in these experiments, because of the increased blood pressure.

6. From the above experiments, it seems highly probable that when death occurs during the early stages of the administration of ether the following conditions prevail: (a) Weakening of the heart due to the direct action of ether; (b) vagus center stimulation; (c) vasomotor stimulation and constriction of the arterioles.

7. If this be true for ether, it is probably likewise true for chloroform.

8. This danger may be obviated by giving the anesthetic in sufficiently dilute form; i. e., the anesthetic should not be crowded. This is easier to do with ether than with chloroform, because ether appears to be more loosely combined in the blood. As a further prophylactic, the use of atropin is advisable as recommended and practiced with good results by Embrey. Atropin partially, at least, prevents vagus inhibition.

9. When circulatory collapse intervenes in spite of these precautions, the indications are to unload the heart of the blood containing the overdose of ether, to dilate the blood vessels, and to assist elimination by artificial respiration, if the respiratory movements are weak. The heart must be unloaded to remove the blood containing the ether. This can be done by the thoracic compression and possibly even by direct cardiac massage, provided the accident occurs during a laparotomy, but a quicker method is to use amyl nitrite. This drug dilates the peripheral blood vessels, drains the blood from the heart, reduces the work imposed on the heart and gives that organ a chance to recuperate. This theory of the action of amyl nitrite is well borne out by our experiments. Ether combined with 2 per cent. amyl nitrite may be injected into the jugular vein in larger quantities than pure ether. Likewise, pure ether injected into the jugular is less toxic when followed by amyl nitrite inhalations. Too much, however, must not be expected. If given too late—i. e., when the ether has thoroughly poisoned the cardiac muscle—amyl nitrite is useless. It should be given as soon as the pulse begins to weaken.

10. Theoretically, amyl nitrite has been objected to on the ground that it still further depresses an already low blood pressure, and adrenalin has been recommended instead. We have experimented with adrenalin and find that subcutaneous injections act much too slowly to produce any effect and that the intravenous injection causes only a temporary rise, not to the normal, followed by a rapid decline. Given when the blood pressure is low and the heart working badly, it causes no rise at all. We believe that adrenalin is contraindicated and these experiments substantiate our view. We do not, however, wish to deny the value of adrenalin when circulatory depression occurs during prolonged anesthesia. In these cases it is possible that the enfeebled heart's action is due to the exhaustion of the vasomotor center consequent on the shock of the operation and the prolonged anesthesia.

As regards the danger of still further depressing the low blood pressure that occurs during sudden heart failure, our experiments show that the pressure falls but slightly under the influence of the amyl nitrite. The increase in amplitude of the heart's pulsations is more marked than is the fall in pressure; in fact, the pressure rises in spite of the continuance of amyl nitrite inhalation. Even if amyl nitrite lowered the pressure markedly, it would not necessarily be contraindicated, provided it unloaded the heart. A temporary low pressure in the arteries is not nearly so dangerous as blood, charged excessively with ether, remaining in and poisoning the heart. Furthermore, the action of amyl nitrite is very evanescent.

11. A strong point in favor of amyl nitrite is the fact that it can be given by inhalation; that its action is, therefore, prompt and that it probably has a direct cardiac stimulatory effect. A subcutaneous injection of any remedy acts much too slowly in these cases of sudden death.

12. We have observed that ether and 2 per cent. amyl nitrite affect the respiration much less. This is in all probability due to dilatation of the arterioles in the brain and the consequent better blood supply to the respiratory center.

13. We have spoken principally of the action of amyl nitrite in overcoming cardiac paralysis when due to ether. We repeated our experiments with chloroform and amyl nitrite and were rather surprised to find that the nitrite exercised but little or no beneficial influence in chloroform poisoning. In fact, chloroform with 2 per cent. amyl nitrite appears to be slightly more toxic than pure chloroform. When chloroform is injected pure into the jugular vein and the amyl nitrite is given by inhalation, there appears to be some slight improvement noticeable in the heart's action; but the antidotal action is much less marked than in the case of ether. In all probability chloroform becomes more firmly fixed in the muscle and the heart fails to rid itself of chloroform as easily as it does of ether. Our experiments of giving repeated non-lethal doses of chloroform and causing death after the third injection would indicate the truth of this hypothesis.

14. Sudden deaths following injection of ether and chloroform subcutaneously for diseases like sciatica are on medical record. It is possible that in these patients the drug entered a vein directly. Intravenously these remedies are intensely poisonous and care should, therefore, be taken in giving them hypodermically that the liquid does not enter some vein.

15. Ether is frequently used subcutaneously as a cardiac stimulant. All experimental evidence indicates, however, that it really depresses the heart. The good results that follow the injections are probably due partly to the pain of the injections and partly to its action as

a vasomotor stimulant. In fact, if one analyzes the cases in which it is given clinically, most of them will be found to be not true cardiac failure cases, but rather vasomotor paresis conditions, such as shock, collapse and asthenic states.

THE ANATOMY OF THE MIDDLE TURBINATE,

WITH SPECIAL REFERENCE TO ITS TOPOGRAPHIC AND SURGICAL RELATIONS.*

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ST. LOUIS.

The most important surgical landmark of the nose is the middle turbinate, or, as it should more properly be called, the inferior ethmoidal turbinate. It must be considered in every operation on the accessory sinuses of the nose that is performed through the nose, as it either comes into relation with these sinuses or blocks the way to them.

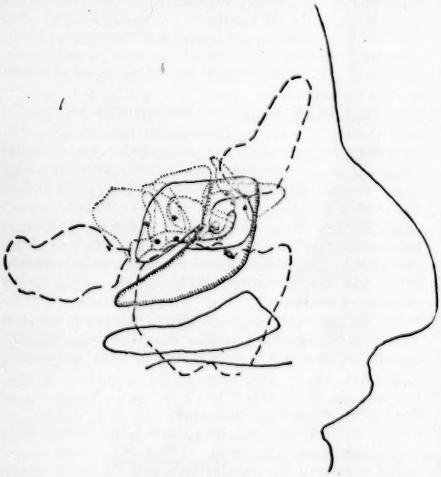

Fig. 1.—Head A, right.

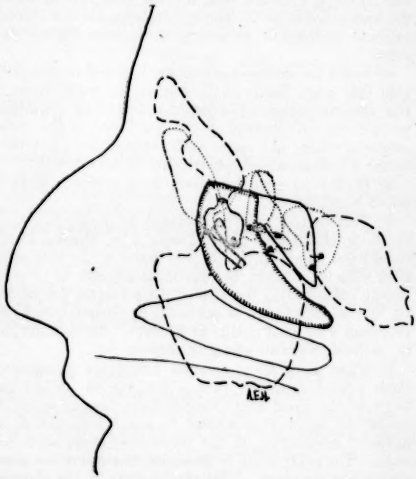

Fig. 1.—Head A, left.

GROSS ANATOMY.

The middle turbinate is that part of the lateral mass of the ethmoid bone which projects from the external wall of the nasal cavity, continuous anteriorly with the lateral mass and separated from its posterior portion by a space known as the inferior ethmoidal fissure. Above the middle turbinate, the ethmoidal fissures, which run more or less parallel to the bone, form from one to three additional turbinates.

Mihalkovics[1] states that it is from 30 to 40 mm. in length, sometimes 45 mm., and from 15 to 16 mm. in height. In estimating its height, he doubtless refers only to the horizontal portion, as it is clearly seen in Figures 1, 2 and 3 that the actual supero-inferior diameter is much larger. A comparison of heads C and D shows what great differences may exist. It is slightly shorter, but generally larger in bulk than the inferior turbinate and much longer and larger than the other turbinates.

The bone is variously described as triangular in shape (Zuckerkandl,[2] Lothrop[3]), or having the general form of a segment of a truncated cone with its apex directed outward (Jacques[4]).

Zuckerkandl describes medial and lateral surfaces, superior, inferior and anterior borders and an angle; Lothrop designates the different parts of the bone as internal and external surfaces, superior, anterior and inferior borders and posterior, superior and anterior angles. While the borders and angles frequently merge into one another, it has been thought best to follow this plan in this paper.

The internal surface is convex, while the external is concave. The term sinus turbinalis was applied by Zuckerkandl to the hollowed-out portion resulting from the coiling of the bone in its posterior and middle thirds.

The superior border is attached horizontally to the outer wall of the nose articulating with the superior maxillary and palate bones. The ethmoid labyrinth lies between this attachment and the lamina papyracea, in this way, as it were, guarding the entrance to the cells.

The inferior border hangs free in the nasal cavity, while the anterior border extends perpendicularly downward from the agger nasi, the homologue of the naso-turbinal. The superior angle lies at the junction of the superior and the anterior borders, not being manifest except in disarticulated specimens. The anterior angle which hangs free at the junction of the anterior and

* From the Anatomical Laboratory of St. Louis University.

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

1. Anatomie und Entwicklungsgeschichte der Nase and ihrer Nebenhöhlen, Heymann's "Handbuch der Laryngologie une Rhinologie," 1900.

2. Normale und Pathologische Anatomie der Nasenhöhle und ihrer pneumatischen Anhänge, Zweite Auflage, 1893.

3. The Inferior Ethmoidal Turbinate Bone, Ann. of Otol., Rhin. and Laryn., September, 1904.

4. Traité de Anatomie Humaine: Poirer and Charpy, 1901.

inferior borders, is known as the operculum. The posterior angle is generally on the same vertical plane as that of the inferior turbinate and the Eustachian tube orifice. On account of its close attachment to the palate bone, it is less easily encircled with a snare than the inferior turbinate.

The ethmoid cells often project into the middle turbinate. According to Lothrop, who has made a very extensive study of 1,000 heads, they occur in 9 per cent., but not in children. In 6.7 per cent. only a single cell was found, and in 1.3 per cent two or more were present. In 5 per cent. of the cases there was a very large cell, constituting what is known as the concha bullosa. In 1 per cent. both middle turbinates contained cells. They are situated almost without exception in the anterior half of the middle turbinate. Forty-five per cent. open into the superior meatus, always about the highest level of the cell, unfavorable therefore for drainage. The remainder open in the middle meatus.

Fig. 2.—Head B, right.

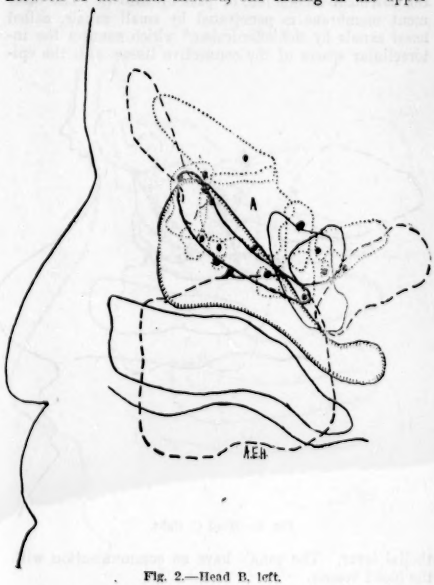

Fig. 2.—Head B, left.

The first ethmoidal cell in head C, left side (Fig. 3) constitutes a concha bullosa by extending into the middle turbinate. The frontal of head B (Fig. 2) enters the right middle turbinate through the superior border to an extent of 8 mm. A similar disposition is found on the left side, where the large ethmoid cell marked *a* extends 5 mm. into the middle turbinate.

The bone is covered with mucous membrane, continuous and similar to that which invests the other portion of the nose, except that it becomes considerably thickened along the free border where the erectile tissue is found. Mihalkowics says that it reaches 7 mm. in thickness in this portion.

It derives its arterial supply from the middle turbinate artery, which is the external branch of the sphenopalatine.

The veins form a very abundant anastomotic system, two networks being distinguishable: The first, superficial, formed of canals of small caliber, is generally directed antero-posteriorly. This extends over the entire mucosa and lies in the subepithelial layer. The second is a deep layer equally abundant, but composed of vessels of larger caliber, very unequally developed, and lying throughout the thickness of the mucosa from the periosteum to the subepithelial layer to which the superficial network is limited. This forms the so-called erectile bodies described by Zuckerkandl under the name of "Schwellkörper."

The tissue is well developed at all points where the mucosa comes in contact with the inspired air (especially along the free border). The blood from this network of veins is collected from two main groups of efferent vessels, the postero-inferior group and the postero-superior group.

Two principal lymphatic trunks drain the lymphatic network of the nasal mucosa, one ending in the upper axoid node, and the other in the nose adjacent to the greater cornu of the hyoid. In this connection, reference may be made to the work of Key and Retzius, who were able to fill the lymphatic network of the nasal mucosa by injecting colored non-diffusible fluids under low pressure into the subarachnoid space of different animals. It must therefore be admitted that there exists a normal communication between the large periencephalic lymph cavity and the nasal lymphatic network in animals. Although this has not been determined for man, it is significant in view of the great operative activity manifested in connection with the middle turbinate and the frequency of pathologic conditions in this vicinity.

The nerve distribution is accomplished through the superior nasal nerves.

MICROSCOPIC ANATOMY.

The mucous membrane which covers the middle turbinate is thickest over the free border and thinnest over the sinus.

Epithelium.—The epithelium, which varies in thickness from 30 to 200 microns, is composed of several layers of cells, the superficial being ciliated columnar. The deepest layers are smaller and more conical. Whatever the thickness of the epithelium, the cilia have a height of 6 microns and move toward the choana. Between the ciliated cells are found numerous goblet cells, which stain like the cells of the mucous glands, when filled with secretion. According to Stöhr,[5] squamous epithelium is frequently found over the middle turbinate.

Basement Membrane.—The basement membrane, which lies between the epithelium and the tunica propria, is homogeneous in appearance. The capillaries which nourish the epithelium are in immediate relation with the basement membrane, or pass up into it. The basement membrane is penetrated by small canals, called basal canals by Schiefferdecker,[6] which connect the intercellular spaces of the connective tissue with the epithelial layer. The canals have no communication with the blood vessels.

Tunica Propria.—This comprises the tissue between the basement membrane and the periosteum. It is composed of white and elastic fibrous, adenoid and muscular tissue, besides glands, blood vessels and nerves.

Fibrous Tissue.—The connective tissue of the mucous membrane is a thick layer composed of bundles of interlacing fibers and is attached to the periosteum. Pigment is found in this layer, but there are no papillæ. Elastic fibers are found in connection with the periosteum and pass into the tunica propria between the glands and blood vessels. They are relatively few in the neighborhood of the adenoid tissue.

Adenoid Tissue.—Immediately under the basement membrane there are found a large number of leucocytes giving a distinct adenoid character to the tissue. The adenoid tissue is widely distributed over the middle turbinate.

Glands.—The glands, which are of the branched tubular variety, are found immediately under the epithelial layer. The walls consist of mucous and clear cells, cylindrical in form, with nuclei in the center. Schiefferdecker does not agree with Stöhr that the mucous cells are found in the alveoli and the clear cells in the tubules, but claims that both varieties are found in analogous tubules. Each gland is surrounded by a membrana propria, which is 0.8 micron in thickness when cut across. The ducts lie sometimes perpendicular to the epithelial surface and sometimes at an acute angle, depending on the size of the gland in relation to the thickness of the mucous membrane. According to von Brunn, the duct, which is extremely narrow, broadens out below the epithelium, into a bladder-like cavity, into which from three to five glandular tubules open.

Blood Vessels.—Zuckerkandl differentiates three capillary systems: One in the periosteum, one surrounding the glands and one just under the surface of the adenoid layers. The arteries supplying the capillaries in the adenoid layer are small in caliber, while the veins which lead from them are much larger.

Erectile Bodies.—These are found most marked over the free border and the posterior extremity, and are limited to no particular part of the mucous membrane. They are constituted by two layers, one holding the coarser venules, the other the finer network. They lie in such a position that they receive the blood from small veins and from the three capillary networks. The veins of the superficial layers open into the fine network and those of the glandular portion and periosteum into the deeper. According to Schiefferdecker, these veins have walls which are not found in any other vein; the musculature is greater than that of the arteries; the inner wall of the vessel is irregularly folded; the arrangement of the fibers in the muscular coat is very irregular, however it appears to be of the usual type. Elastic fibers are interspersed through the muscular layer, but without regular arrangement, as in the ar-

Fig. 3.—Head C, right.

Fig. 3.—Head C, left.

5. Histology, Sixth Am. Edition, 1906.
6. Histologie der Schleimhaut der Nase und ihrer Nebenhöhlen, Heymann's "Handbuch der Laryngologie und Rhinologie," 1900.

teries. Between the vessels are thick bundles of white fibrous tissue with numerous elastic fibers.

Periosteum.—The periosteum is in two layers, the upper being composed of white fibrous connective tissue, with numerous elastic fibers, which are continued into the tunica propria. The deeper layer is composed of osteoblasts.

Bone.—The microscopic anatomy of the bone does not differ from that of the other portions of the lateral mass of the ethmoid bone.

EMBRYOLOGY.

To understand the development of the turbinates, the whole subject of the embryology of the nose must be considered, from the time when the nasal pits appear until it reaches its highest development. The turbinates are in the main developed from the outer wall of the nose by the formation of numerous fissures constituting a system of furrows between which projecting portions of the wall remain.

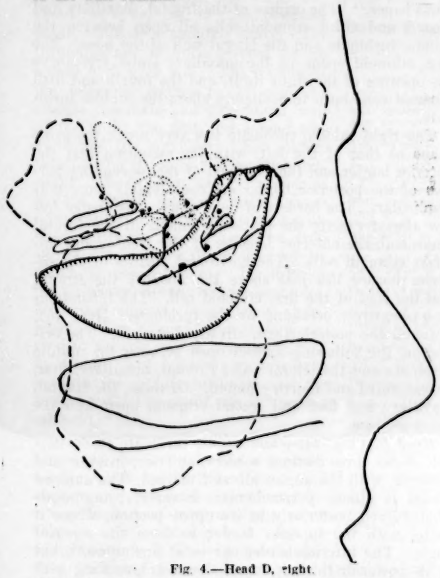

Fig. 4.—Head D, right.

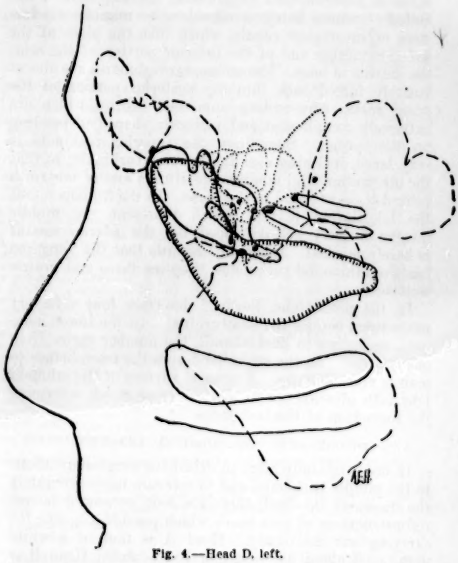

Fig. 4.—Head D, left.

According to Peter,[7] the turbinates originate partly from the posterior portion of the septal wall. Killian[8] maintains that the nose possesses originally six primary furrows, all of which except the first are likely to disappear, though two or more may be present. In this way there is a coalescence of the turbinals giving the varieties which are found in adult life. He claims that the middle turbinate results from the descending branch of the second primary turbinate, including a small part of the ascending branch.

Hajek[9] states that the important structures of the lateral mass develop from four or five fundamental lamellæ and from the passageways between them. The uncinate process is developed from the first, the bulla ethmoidalis from the second and the middle turbinate from the third. The upper turbinates are developed from the corresponding lamellæ.

COMPARATIVE ANATOMY.

The middle turbinate, which genetically may be considered one of the olfactory turbinates, corresponds to the ethmoturbinal in mammals, the superior turbinal in birds and the pseudo-concha in certain of the saurians. In man, however, the middle turbinate is more largely respiratory in its character.

In considering the middle turbinate from the standpoint of comparative anatomy, it must be associated with the other ethmoturbinals. Taking all the ethmoturbinals together, Dieulafé[10] explains their philogenetic relations as follows: The number varies in mammals from three to nine, five being the most common (carnivora, rodents, insectivora, lower monkeys). In the sauropsidian reptiles there is a single turbinate which Solger calls a false turbinal (pseudo-concha). Dieulafé, however, observes that at least in the adder, python and blind worm, it has the appearance of a true turbinate, especially according to the definition of Gegenbaur to the effect that it should be a projection extending from the nasal wall by a narrow portion.

In the crocodiles there is a true turbinate of cartilaginous consistency. In birds the superior turbinate appears to be the homologue of the ethmoturbinal, although Gegenbaur denies that it is a true turbinal. In the vulture, however, according to Dieulafé, it appears to correspond to the ethmoturbinal by reason of its insertion in the supero-internal angle of the nasal cavity.

7. Anlage und Homologie der Nasenmuscheln, Arch. f. Mikroscopische Anatomie, IX.

8. Zur Anatomie der Nase Menschlicher Embryonen, Arch. f. Laryn. und Rhin., 1896.

9. Pathologie und Therapie der entzündlichen Erkrankungen der Nebenhöhlen der Nase, 1899.

10. Morphology and Embryology of the Nasal Fossæ of Vertebrates, translated by H. W. Loeb, Ann. of Otol., Rhin. and Laryn., 1906.

The ethmoturbinals of the mammals more nearly resemble those of man. They may be united as in the guinea-pig, or completely separated from one another, as in the badger, or one may be very voluminous and entirely detached from the others, which are united together, as in the sheep. The rat has four ethmoidal turbinals. The superior is longest and reaches far beyond the second, which extends beyond the third. The cat has three turbinates, one of which is divided into two. Bears have seven and the *Mustelidæ* from six to seven.

Milne Edwards[11] states that the difference in the conformation of this portion of the nose in mammals depends on two factors: The distribution of the septal lamina of the inferior turbinate and the disposition of the ethmoidal turbinates. When the inferior turbinate is very well developed, as in the dog and some other carnivora, it occupies almost the entire anterior portion of the nasal fossæ, and, by subdivision, gives rise to a series of superimposed longitudinal laminæ, more or less coiled, circumscribing a considerable number of furrows or incomplete canals, which take the place of the inferior meatus and of the inferior portion of the middle meatus in man. The ethmoidal turbinates are almost entirely forced back into the posterior portion of the nasal fossæ, surrounding numerous fissures which are extremely complicated and variously shaped, depending on the species. Sometimes the superior turbinate is very large, inclining over the inferior turbinate, so that the other ethmoidal laminæ constitute a sort of labyrinth behind it, as is found in the horse. In the hippopotamus the labyrinthal fissures which represent the middle meatus are very well developed, but the inferior meatus is barely marked. Ingersoll[12] records that the kangaroo has five ethmoidal turbinates, the deer three and prairie wolf seven.

In the prosimians, Seydel[13] describes four olfactory projections besides the nasoturbinal. In the lower monkeys, according to Zuckerkandl, the number varies from one to three. In the anthropoid apes the resemblance to man is more striking. The nasal surface of the ethmoid labyrinth presents one or more furrows which determine the formation of the turbinates.

TOPOGRAPHIC AND SURGICAL ANATOMY.

In order to study more in detail the surgical relations to the middle turbinate, and to measure more accurately the distances involved, there are here presented lateral reconstructions of four heads which provide a means for carrying out this study. Head A is that of a white man, aged about 35, weighing 150 pounds; Head B is that of a negro, male, aged 28 years, weighing 190 pounds; Head C is that of a white woman, aged above 65, weighing about 120 pounds; Head D is that of a white man, aged 35, weighing about 160 pounds.

The frontal, sphenoid and maxillary sinuses are represented in parted lines, the ethmoid cells in dotted lines, the turbinates in complete lines, the middle turbinate being shaded. The infundibulum is represented by very black lines, the orifices of each of the cells by heavy black dots. In reference to this, it must be understood that these lines show the greatest diameters of the infundibulum—the hiatus would be much smaller. It is thus easy to study the topographic relations of the middle turbinate to the structures designated.

The heads were all injected with a 50 per cent. formalin solution and decalcified by immersion in a 3 per cent. solution of hydrochloric acid for three months, after which they were sectioned. The formalin slightly shrinks the soft parts, but the bones are not affected in this respect.

Head A (Fig. 1).—The left middle turbinate begins 3 mm. above the orifice of the frontal sinus. Its anterior and inferior borders are merged together, passing downward and backward, almost uniformly curved. The superior border inclines slightly downward for 12 mm., then turning downward at a right angle, continues backward, forming a curve with a larger radius than that of the anterior border. In this way the borders meet and form a more or less pointed posterior angle. It completely overhangs the infundibulum, which is shown here to possess the secondary arm, described in a previous paper.[14] The orifices of the frontal, maxillary and second and third ethmoid cells all open between the middle turbinate and the lateral wall of the nose. The first ethmoid opens in the maxillary sinus just above the opening of the sinus itself, and the fourth and fifth ethmoid cells open immediately above the middle turbinate.

The right middle turbinate has very much the same shape as that of the left, with the exception that the anterior border and the first part of the descending portion of the posterior border are considerably more perpendicular. The borders of both middle turbinates follow almost exactly the posterior lamella of the frontal sinus and the anterior lamellæ of the frontal and anterior ethmoid cells. The horizontal portion of the superior border lies just above the floor of the frontal and the roof of the first ethmoid cell. The infundibulum is entirely overhung by the turbinate. Here, too, is found the posterior arm already described. The orifices of the following sinuses open between the middle turbinate and the lateral wall: Frontal, maxillary, first, second, third and fourth ethmoid. Of these, the frontal, maxillary and first and second ethmoid open into the infundibulum.

Head B. (Fig. 2).—The middle turbinate on the left side shows three distinct borders, anterior, inferior and superior, with the angles all well marked. The anterior border is almost perpendicular, however, being somewhat curved posteriorly in its upper portion, where it unites with the superior border to form the superior angle. The inferior border curves at first upward, but in its posterior third it curves downward, uniting with the postero-superior wall in a rounded extremity. The posterior border forms an angle of about 45 degrees with the anterior border, and continues downward and backward in this position until it reaches its posterior sixth, where it becomes almost horizontal and takes part in the formation of the rounded posterior extremity. The posterior angle extends 10 mm. behind the posterior angles of the other turbinates. The infundibulum projects 2 mm. above the superior angle and 3 mm. behind the superior border. The orifices of the following sinuses open between the middle turbinate and the lateral wall of the nose; the frontal sinus, the second, fourth, fifth, sixth and seventh ethmoid and the maxillary sinus.

The middle turbinate of the right side follows very closely the shape of that of the other side, except that

11. Leçons sur la Physiologie et l'Anatomie Comparée de l'Homme et des Animaux, Faites a la Faculté des Sciences de Paris, x. 1874.
12. Function of the Accessory Cavities of the Nose, Ann. of Otol., Rhin. and Laryn., December, 1906.
13. Ueber die Nasenhöhle der hoheren Saügethiere und des Menchen. Morphologische Jahrbuch, 1891.
14. Study of the Anatomy of the Accessory Cavities of the Nose by Topographic Projections. Ann. of Otol., Rhin. and Laryn., December, 1906.

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the inferior border presents three convex and two concave curves. The upper angle is wider antero-posteriorly, and the posterior extremity is somewhat larger and does not project so far posteriorly. The infundibulum extends 1 mm. anterior to the anterior border, and 2 mm. behind the superior border. The orifice of the following sinuses lie between the middle turbinate and the lateral wall: Frontal, maxillary, first, second, third, fifth and sixth ethmoid.

Head C (Fig. 3).—In this head the middle turbinate is of very small proportions. On the left side the superior border passes posteriorly and slightly downward for one-half of its extent, when it becomes almost horizontal. The anterior border passes downward and forward, with the inferior border at the operculum forming an angle of about 125 degrees. The inferior border continues at this inclination to its lowermost portion, when it becomes almost horizontal, then at its posterior third passing upward and backward at an angle of about 160 degrees to the posterior angle, which is moderately sharp. The infundibulum is only covered to an extent of 7 by 4 mm. The orifices of the following sinuses lie between the middle turbinate and the lateral wall of the nose: the first and second ethmoid and the maxillary. The middle turbinate on the right side is much narrower. The superior wall, which begins in the sharp superior angle passes downward and backward, becoming almost horizontal in the posterior two-thirds. It has a small anterior border which is perpendicular. Its inferior border passes downward and backward, becoming almost immediately horizontal. The infundibulum is only covered to a slight extent, amounting to 8 by 4 mm. The following orifices open between the middle turbinate and the lateral wall: The maxillary, and second ethmoid.

Head D (Fig. 4).—The middle turbinate on the left side has a superior border which is first horizontal and then passes sharply downward and becomes horizontal with a slight curve throughout its posterior half. Its anterior border is first perpendicular, then inclining backward, joins the inferior border, which is more or less horizontal, its posterior portion curving up to join the superior border. The infundibulum projects slightly above the upper border, slightly anterior to the upper part of the anterior border, and considerably posterior to the perpendicular portion of the superior border. The orifices of the following sinuses lie between the middle turbinate and the lateral wall of the nose: The maxillary, the frontal and the fourth ethmoid.

The right middle turbinate has approximately the same shape as that of the left, except that both the antero-inferior and the superior borders are more regularly curved. In this way the antero-inferior border presents a convex appearance throughout, while the superior border is concave. The infundibulum does not extend above the superior border except posterior to its most concave portion. It extends anterior to the anterior border for 7 mm. of its extent. The orifices of the following sinuses lie between the middle turbinate and the external wall of the nose: Frontal, maxillary and first ethmoid.

Topographic Measurements.—The greatest diameters of the middle turbinates as shown by the reconstructions are as follows:

	A. R.	A. L.	B. R.	B. L.	C. R.	C. L.	D. R.	D. L.	Greatest.	Least.	Mean.
Antero-postero...	33	34	38	45	30	50	48	48	48	30	38
Supero-inferior..	34	34	34	35	14	18	17	12	35	12	25
Lateral.....	13	11	14	10	0	9	11	11	14	9	11

It is thus seen that there is relatively little difference in the lateral diameters. The antero-posterior diameter varies considerably. In head D it is the greatest. The supero-inferior diameter in heads A and B is practically the same, while in heads C and D it is hardly half as great. It is interesting to note that the middle turbinates of head D, notwithstanding their great extent

TABLE 1.—A. MEASUREMENTS BETWEEN ANTERIOR EXTREMITY OF MIDDLE TURBINATE AND:

	A. R.	A. L.	B. R.	B. L.	C. R.	C. L.	D. R.	D. L.	Greatest.	Least.	Mean.
Ant. extremity of maxillary sinus....	9	10	11	5	7	5	2*	6*	6*	11	4
Ant. extremity of frontal sinus.....	11*	11*	6*	4*	7*	1	12*	11*	1	12*	8
Ant. extremity of 1st ethmoid cell....	6	9	0	1*	3*	2	7*	8*	8*	9	1
Ant. extremity of last ethmoid cell....	25	21	27	32	17	34	25	23	17	34	26
Ant. extremity of sphenoid	30	27	34	82	28	39	32	32	27	39	32
Post. extremity of maxillary sinus....	28	27	34	34	29	26	46	50	26	50	34
Post. extremity of frontal sinus.....	10	12	18	11	7	6	15	18	7	18	13
Post. extremity of 1st ethmoid cell...	6	7	7	12	16	14	19	23	6	23	13
Post. extremity of last ethmoid cell...	49	35	41	47	36	38	35	35	35	47	38
Post. extremity of sphenoid sinus.....	61	54	54	55	58	54	54	61	54	61	58
Ant. point of inferior turbinate.....	8*	14*	13*	10*	10*	9*	9*	3	3	14*	9
Post. point of inferior turbinate.....	25	34	37	38	23	21	45	45	22	45	35
Ant. point of 2d ethmoidal turbinate..	13	15	23	23	18	19	22	22	13	23	18
Post. point of 2d ethmoidal turbinate.	29	29	38	38	21	26	45	45	21	45	34
Ant. point of 3d ethmoidal turbinate.	..	..	29	26	19	20	28	29	19	29	24
Post. point of 3d ethmoidal turbinate.	..	..	39	38	22	24	42	43	22	43	35
Orifice of frontal sinus.....	3	6	11	6	1	4	14	16	1	16	8
Orifice of maxillary sinus.....	6	3	12	15	4	4	19	19	3	19	11
Orifice of sphenoid sinus	36	31	43	38	33	39	35	33	31	43	36
Orifice of 1st ethmoid cell.....	3	9	4	10	8	3	11	16	..	..	..
Orifice of 2d ethmoid cell.....	6	13	5	11	9	6	17	18	..	..	..
Orifice of 3d ethmoid cell.....	8	18	5	12	10	22	18	21	..	..	..
Orifice of 4th ethmoid cell	10	20	18	9	14	22	21	21	..	..	..
Orifice of 5th ethmoid cell	15	29	19	13	15	36	22	24	..	..	..
Orifice of 6th ethmoid cell.....	19	..	23	12	18	..	25	29	..	..	..
Orifice of 7th ethmoid cell.....	20	..	30	20	19	..	26	..	..	..	..
Orifice of 8th ethmoid cell.....	24	..	32	22	..	..	26	..	..	..	..
Orifice of 9th ethmoid cell.....	27	..	33	29	..	..	..	..	..	..	..
Orifice of 10th ethmoid cell.....	10	..	..	29	..	..	..	..	..	..	..
Orifice of 11th ethmoid cell.....	..	..	..	33	..	..	..	..	..	..	..
Orifice of 12th ethmoid cell.....	..	..	..	34	..	..	..	..	..	..	..

* Anterior. Other measurements are posterior.

B.—MEASUREMENTS BETWEEN SUPERIOR EXTREMITY OF MIDDLE TURBINATE AND:

Roof of frontal sinus.....	25	25	20	21	20	19	16	22	29	16	23
Roof of ethmoid labyrinth.....	4	8	13	15	11	17	9	9	17	4	11
Roof of maxillary sinus	17*	12*	18*	21*	2*	6*	11*	13*	21*	2*	12
Roof of sphenoid sinus	16*	7*	5*	12*	12	10	10	11	16*	12	0

* Inferior. Other measurements are superior.

antero-posteriorly, are far smaller in their other diameters than those of the other heads except head C.

The accompanying measurements in millimeters (Table 1) are taken between parallel planes, running through the specified points:

As might be expected, there is considerable variation, the greatest being in the following: Between the anterior extremity of the middle turbinate and the posterior extremity of the maxillary sinus, the posterior extremity of the inferior turbinate and the posterior extremity of the superior turbinate, in which it is 24 mm. This should not be surprising, as they represent the greatest but one of the measurements taken. In each instance the extremes are heads C and D (Figs. 3 and 4). In the first and third of these measurements heads A and C agree very closely.

The least variation is found between this same point and the posterior extremity of the sphenoid amounting to 7 mm., notwithstanding the fact that the greatest

distance is concerned. The anterior extremity of the sphenoid presents greater variations in the distance from this point, being altogether 12 mm. Head C, left side, is responsible for this by reason of the fact that although the sphenoid extends almost as far back as the others, it has an antero-posterior diameter of only 16 mm. as contrasted, for instance with that of the right side of this same head, 30 mm. Leaving out this, the variation is but 7 mm., viz., from 27 to 34 mm.

Very naturally there is considerable variation between the superior extremity of the middle turbinate and the roofs of the fontal sinus, ethmoid labyrinth and maxillary sinus. The roof of the sphenoid sinus in heads A and B (Figs. 1 and 2) lies below the superior extremity of the middle turbinate and that of heads C and D above. A glance at the figures will show the high position of the sphenoid in these two heads, in head D reaching above the ethmoid labyrinth and almost to the level of the frontal (Fig. 4).

The variation in the distance to the orifices of the various sinuses is seen to be considerable, reaching 15 mm. in the frontal, 16 in the maxillary and 12 in the sphenoid. The greatest distance for the sphenoid is found in head B, right side, where the orifice is situated on the supero-anterior wall 9 mm. behind its anterior extremity. Leaving out this, the variation would only be 8 mm.

The first ethmoid varies from 3 to 16 mm., the greatest distance being found in head D. The most posterior ethmoid cells vary in distance from 19 to 34 mm. The least is found in head C (Fig. 3), right side, where the last cell is a large one, resulting possibly from the fusion of several cells. Leaving out this cell, the variation would only be 9 mm.

SURGICAL MEASUREMENTS.

With a view to determining measurements which would be of service in surgical anatomy, it was thought best to select a point from which to make these measurements which would come most generally into play during operations. In view of the great variation in shape as shown by the figures as well as of size, course and relations, selection was made of the point on the anterior or inferior border nearest the lower portion of the vestibule. This in each case proved to be on the operculum or very close to it. Accordingly, measurements were made from the junction of the cutaneous nasal septum with the lip. Although the heads vary so greatly, it is astonishing how little difference there is in these particular measurements. They are as follows:

A. R.	A. L.	B. R.	B. L.	C. R.	C. L.	D. R.	D. L.	Greatest.	Least.	Mean.
38	39	32	32	29	26	38	38	39	26	34

It is thus seen that in head C, very small and very atrophic compared with head A (very large), there is only a difference of 13 mm. Leaving out head C as small and atrophic, the difference is only 7 mm., while the heads A and D are almost exactly the same, the figures being 38, 39, 38, 38.

From this point in the different heads measurements have been made to structures that are involved in surgical procedures (Table 2).

It thus appears that in these heads an instrument would traverse from 11 to 22 mm. in reaching the floor of the frontal sinus from the point selected, the usual being from 16 to 22. There is about the same variation in the distance to the orifice of the frontal sinus, the figures being 14 to 25 mm., the usual being from 18 to 23 mm. The floor of the first ethmoid cell is in the main from 7 to 13 mm., while in one instance it reached 18 mm. The roof of these cells varies from 20 to 36 mm. The last figure applies to the cell in head A, left side, which replaces the anterior wall of the frontal sinus (Fig. 1). The extreme figures for the anterior wall of the last ethmoid are 35 and 14 mm., as found in head C. The others vary from 22 to 31 mm. The difference in head C is due to the fact that the posterior cell on the right side is very large and that on the left very small (Fig. 3). In head B, in which the posterior ethmoid cells are very large, the distances are 40 and 46 mm. (Fig. 2). In the other heads they run from 32 to 38 mm. The orifices of the ethmoid cells, numbering 63 in the four heads, lie from 3 to 36 mm. from the point selected. The number, size and position are so diversified that nothing approximating a general rule can be formulated.

TABLE 2.—MEASUREMENTS MADE TO STRUCTURES INVOLVED IN SURGICAL PROCEDURES.

	A. R.	A. L.	B. R.	B. L.	C. R.	C. L.	D. R.	D. L.	Greatest.	Least.	Mean.
Floor of frontal	18	18	16	16	20	22	11	11	22	11	14
Roof of frontal	49	49	53	46	33	30	50	55	55	30	48
Floor of 1st ethmoid	12	10	13	13	8	7	18	10	18	7	12
Roof of 1st ethmoid	22	36	31	28	20	28	31	21	36	20	27
Anterior wall of last ethmoid	22	22	26	31	14	35	28	24	35	14	27
Posterior wall of last ethmoid	38	32	40	46	38	38	35	34	46	32	38
Floor of maxillary	26	36	33	30	18	25	27	37	37	18	29
Roof of maxillary	5	10	3	0	2	0	5	12	12	0	5
Anterior wall of sphenoid	27	24	32	30	24	39	30	25	39	24	29
Posterior wall of sphenoid	57	50	52	54	54	52	50	50	57	50	52
Orifice of frontal	18	18	22	25	20	23	14	14	25	14	19
Orifice of 1st ethmoid	15	10	15	14	3	9	21	21	..	..	..
Orifice of 2d ethmoid	16	15	18	15	7	8	21	22	..	..	..
Orifice of 3d ethmoid	11	16	21	13	9	22	24	14	..	..	..
Orifice of 4th ethmoid	11	19	18	22	12	23	23	21	..	..	..
Orifice of 5th ethmoid	12	24	22	23	14	36	20	22	36	3	..
Orifice of 6th ethmoid	14	..	20	26	18	..	26	27	..	..	..
Orifice of 7th ethmoid	20	..	24	21	17	..	27	..	..	..	..
Orifice of 8th ethmoid	17	..	28	21	..	..	29	..	..	..	..
Orifice of 9th ethmoid	21	..	30	27	..	..	..	..	..	..	..
Orifice of 10th ethmoid	25	..	32	32	..	..	..	..	..	..	..
Orifice of 11th ethmoid	..	..	..	32	..	..	..	..	..	..	..
Orifice of 12th ethmoid	..	..	..	31	..	..	..	..	..	..	..
Orifice of maxillary	5	10	11	14	5	2	14	13	14	2	9
Orifice of sphenoid	32	27	42	36	30	40	35	33	42	27	34

The maxillary sinus presents very wide differences, the floor from 18 to 37 mm., the roof from 0 to 12 mm. and the orifice from 2 to 14 mm. The inferior turbinate is a far better starting point for this sinus.

The ethmoid is far more uniform. In head C, left side (Fig. 3), it is unusually small and deeply placed. Its distance, therefore, is very great, 39 mm. The others vary from 24 to 32 mm. The posterior walls are from 50 to 57 mm. from the selected point. On account of the irregular position of the orifices their distance is from 27 to 42 mm. The infundibulum lies from 3 to 16 mm. above the selected point.

TOPOGRAPHIC RELATIONS OF THE MIDDLE TURBINATE TO THE ACCESSORY SINUSES.

Maxillary Sinus.—It is observed that in each instance the middle turbinate crosses the superior and posterior walls of the maxillary sinuses and in no case the anterior wall.

Frontal, Ethmoid and Sphenoid Sinuses.—In all four heads these sinuses, when taken together, are

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to lie parallel to the middle turbinate. In heads C and D (Figs. 3 and 4), it is almost horizontal and the sinuses are similarly placed, almost all of them lying wholly above the bone. With one exception, in head D, the sphenoids reach a higher point than the ethmoids, almost attaining the level of the frontal.

When these are compared with heads A and B (Figs. 1 and 2), the contrast is most marked. The latter follow the inclination of the middle turbinate downward and backward. The frontals are far above the ethmoids and the sphenoids are much below the roof of the ethmoid labyrinth. The floor of the sphenoids in these heads reaches a much lower level than that of any of the ethmoids with the exception of the right side of head B, in which the last ethmoid attains the same level. At any rate, it will be interesting to determine whether or not it is common for these cells to follow so closely the inclination of the middle turbinate.

It is not intended to make the claim that the facts brought out are in any sense authoritative for all heads. They represent the results of the study of the four heads reconstructed. A definite rule as to the general average or to the usual situation can be established only after numerous heads have been reconstructed in the same manner.

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[THE DISCUSSION IS UNDER SECTION DISCUSSIONS.]

PATHOLOGY OF THE MIDDLE TURBINATE.*

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The pathology of the middle turbinate is in general the pathology of the other intranasal structures. It is subject, as they are, to infectious inflammations, both of determined and undetermined etiology, to the progressive and regressive disturbances of nutrition, and to various processes of degeneration and atrophy. I assume, however, that your committee in assigning to me this subject had in mind that I should treat of those pathologic alterations of the middle turbinate which, from the situation and anatomic structure of the bone, assume here certain definite peculiarities. I shall leave out of consideration, therefore, the pathology of hay fever, of acute rhinitis of other infections and of benign and malignant tumors. We have left those processes which may be grouped under the head of chronic inflammation with tendency to hypertrophy. In association with these conditions are found histologic evidences of degeneration in the mucous membrane and glands.

The middle turbinate, or, more correctly speaking, the inferior ethmoidal turbinate bone, forms the antero-inferior triangle marked off on the internal wall of the lateral mass of the ethmoid by the inferior ethmoidal fissure and a line projected forward and upward to the antero-superior angle of the surface. I may leave out of consideration its anatomic relations and its normal gross anatomy. Histologically, it is seen to be covered with a thin periosteal layer, a varying amount of loose connective tissue containing glands, the whole being covered by columnar ciliated epithelium. The mucous membrane and the connective tissue contain numerous cavernous spaces, representing erectile tissue. Examining these structures more in detail, we find a columnar ciliated epithelium with a well-defined basement membrane, perforated everywhere by canaliculi, running more or less obliquely. Many of these canaliculi contain polynuclear neutrophilic leucocytes, fixed in irregular positions, indicating ameboid movement.

The basement membrane passes directly into a loose, connective tissue, the submucosa of which exhibits irregularly outlined lymph spaces, containing small round cells, in varying numbers. These round cells have the character of lymphoid cells, plasma cells, *Mastzellan*, with a smaller number of polynuclear leucocytes. The glands are situated usually below this lymphoid layer and consist of aggregations of cells, the majority of which show mucous degeneration. In immediate association with these muciferous cells are others of a protoplasmic character. Close inspection of these protoplasmic or albuminous cells shows that a certain proportion are disposed to form acini, with narrow, linear, intercellular channels. In the examination of a given field, one finds these glands with capillaries, situated, as a rule, to one side of or below the muciferous cells. These capillaries at times show an irregular course, sometimes with vacuoles near their orifice. From what we know of the serous glands in the larynx and trachea, we may conclude that we have here to do with essentially similar glands. We may say, therefore, that the glands in this portion of the nose are composed chiefly of mucous acini, showing varying degrees of activity, as indicated by the degree of the development of the mucous degeneration in the gland cells, together with a smaller number of serous acini, which apparently form a separate division of the gland group. In the vicinity of these glands is a moderate, round-celled infiltration, consisting of lymphoid and plasma cells.

The cells of the middle turbinate, using the word in the sense of a chamber, are strictly ethmoid cells, and occur in varying size and number. They range in size from those discoverable only by the microscope to one of 7 cm. reported by Fraenkel.[1] When of small size they can hardly be considered of pathologic nature, although, as will be seen presently, the larger ones are found in conditions of chronic hypertrophy and inflammation. The cells stand in direct relation with the middle meatus. The opening is usually small, and situated on the lateral upper and posterior part of the wall.

The lining mucous membrane of the cell consists of a fine ciliated cylindrical epithelium, with a loose, thin and delicate stroma. Glands are found occasionally. Kikuchi[2] found these cysts of the middle turbinate as early as the fourth fetal month.

We pass now to the consideration of the alterations of the middle turbinate, characterized by tendency to hypertrophy. As the result of recurrent attacks of acute inflammation which do not obtain complete absorption, certain characteristic changes are found in the tissues. In superficial inflammations, an infiltration of mononuclear neutrophiles and plasma cells occurs in the adenoid layer, and in the vicinity of the basement membrane, localized particularly around the smaller blood vessels and the various ducts of the glands. The granular cells described by Ehrlich, *Mastzellen*, are usually present, and there is an increase in the number of cells showing colloid degeneration. The papillæ of the mucous membrane may be lengthened into wart-like prominences as the result of three factors: First, the prolifera-

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

1. Berl. klin. Wochschr., No. 22, 1890.
2. Fraenkel's Archiv f. Laryng., 1903, p. 320.

tion of the fibrous tissue; second, the proliferation of the columnar cells of the surface and of the cells of the ducts of the glands by segmentation parallel to their long axes; third, a dilatation of the chief ducts of the glands and their communicating acini. Associated with these changes is the presence of a certain amount of edema in the tissues, most marked in the anterior end of the middle turbinate, giving rise to circumscribed hypertrophies known as polypoid enlargements. The stroma of these growths consists of more or less loose connective tissue, the meshes of which contain round cells and albuminous fluid. The anterior aspect of the structure is exposed to external irritation and its cylindrical epithelium tends to become altered into pavement epithelium.

The basement membrane of these hypertrophies is well defined and shows numerous canaliculi. Below this region the chief changes are seen to consist in an increased development of the fibrous tissue and, as a rule, of the glandular elements. The venous sinuses are not dilated in proportion. About one-third of the glands consist of the serous type, the remainder of the mucous form, with active and resting cells, in varying proportions.

In the papillary form of hypertrophy the essential changes consist in an irregular mammillation of the epithelium, due to an increased proliferation of the epithelial cells. The basement membrane is well defined and shows numerous canaliculi. There is no especial difference noted in the glands from those occurring in simple hypertrophy.

If the amount of edematous infiltration increases in the polypoid enlargement of the middle turbinate, an actual polypus is formed. The mucous membrane is then usually somewhat thinned and consists of cells ranging in type from columnar ciliated to squamous, the latter occurring, as a rule, in situations exposed to constant irritation, as the anterior aspect of polypi. The basement membrane is usually a slender, well-defined line, showing canaliculi in considerable numbers. Below this region there is an evident fibrous hypertrophy, accompanied by edema. The individual connective tissue fibers appear as delicate interlacing strands, separated by intervals of varying size, dependent on the degree of the development of the edema. In this edematous area glands are seldom encountered. When they occur, they are usually found in the deeper portions. In these situations they show little or no tendency to increase in size or number. The mucous cells of the mucous glands are usually less frequent than in hypertrophy without edema. The serous cells show no marked alterations.

The acini of the glands show cystic dilatation which may at times be so marked as to form a cyst occupying the greater portion of the polyp. Two forms of degeneration are found in the chronic inflammatory processes under consideration: First, mucous degeneration of the epithelium of the surface and of the ducts of the glands; second, a colloid or hyalin degeneration of the migratory cells of the connective tissue. In mucous degeneration the superficial epithelium may become totally or partially degenerated. In the first instance, all the cylindrical epithelium is transformed, cell for cell, into an epithelium consisting of goblet cells filled with mucus. In the examination of these conditions the following stains may be recommended: hemotoxylin and congo red, as suggested by Retzius[3] and E. Mueller,[4] Mallory's[5] triple connective tissue stain, which affords beautiful pictures of mucous degeneration of the cells, in addition to the fibrous elements; mucicarmin, as suggested by A. Mayer; muchaematin, as suggested by A. Haidenhain.[6] I have found many other stains less satisfactory for the present purpose, such as Hoyer's[7] thionin stain and several stains given by Unna for the demonstration of mucin.

Hyaline or colloid degeneration is found with especial frequency in the condition under consideration. In the mucous membrane are found homogenous globules, most numerous in those situations which exhibit round-celled infiltrations. These globules are supposed to arise from plasma cells by a degenerative process which resembles thyroid colloid in its staining reaction. In specimens stained with hemotoxylin and acid fuchsin the nucleus appears dark blue and atrophied. The degeneration begins with a slight swelling of the cytoplasm which becomes dark and broken. These fragments increase in size, become rounded, more refractile and stain more deeply with acid fuchsin. The cell, now much enlarged, has the form of a sphere, and many of the fragments coalesce to form larger ones. The atrophied nucleas is usually still visible. Finally there arise completely homogenous oval structures staining dark cherry red with acid fuchsin. The advanced stages of degeneration are more commonly found than the early stages. In the beginning their structure is probably plastic, so that through close apposition of the small granules and their coalescence larger granules are formed. It has been assumed that the presence of hyaline and colloid degeneration in the hypertrophied mucous membrane is not accidental, but stands in intimate relationship with the nature of these hypertrophies. It shows no tendency to spontaneous retrogression.

By some authors these corpuscles have been regarded as blastomycetes, but this view does not seem tenable at present.

In more advanced stages of the inflammation the glandular layer and the periosteum become the site of an infiltration. All the medullary spaces are more or less completely filled with compact cellular infiltration, particularly in the neighborhood of the vessels. The germinal layer of the periosteum exhibits an infiltration with mononuclear lymphocytes, plasma cells and *mastzellen*. Coincident with this infiltration there is a proliferation of the germinal layer of the turbinate, as a result of which large nucleated cells are separated and deposited as an osteoblastic layer on the old bone. From this osteoblastic layer, a compact intermediate substance, osteoid tissue, is generated, producing irregular cavities. This osteoid tissue lies partly diffuse and partly in circumscribed prominences on the old bone, giving rise to a diffuse thickening of the latter, and to prickle-like bony excrescences. The new formation of bone constantly progresses by the deposit of new layers of osteoblasts on the osteoid tissue. In the same way, there may be observed a new formation of bony substance proceeding from the medullary cavities by an adhesion of the cells of the medulla to the old bone, as an osteoblastic zone, which after the formation of intermediate substance becomes osteoid tissue. Here and there the medullary spaces appear narrowed by the new-formed bone.

Coincident with this process of bone production, another alteration is frequently observed, in which absorp-

3. Ueber die Anfange der Drüsengange und die Nervenendigungen in den Speicheldrüsen des Mundes. Biol. Untersuch. Neue Folge, 111, 1892.

4. Ueber Sekretkapillaren. Archiv f. mikros. Anat., 1896, lxv, 447.

5. Mallory and Wright: Pathologic Technique, 1903.

6. Ueber die acinoese Druesen der Schleimhaute, etc., Diss., Breslau, 1870.

7. Ueber den Nachweis des Mucins in Geweben mittelst der Farbenmethods. Archiv f. mikros. anat., xxxi.

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tion of bone takes place. This is a result of the process of rarefying osteitis, and is characterized by the occurrence of numerous giant cells or osteoclasts in excavations of bony lacunæ. These vary in number according to the degree of absorption which is taking place. The absorption of the bony trabeculi is found at times on the outer surface which faces the mucous membrane or at times on that which faces the medullary spaces. Usually both conditions occur. The trabeculi are eroded by the osteoclasts and continually rendered thinner and thinner, so that the medullary spaces continually increase in size. In the extensive stages of refraction numerous trabeculi are completely eroded, and thus suffer solution of continuity. They separate then into irregular loose pieces, which may themselves be attacked later by deposits of osteoclasts, so that it may result that the bony framework of the turbinate consists of a number of loose pieces rather than of a coherent bony framework.

In advanced stages the cavities may be produced from the coalescence of adjoining medullary spaces, which by continued progression may form bony cysts. Such a cyst is usually lined with columnar ciliated epithelium and contains no glands in its interior, but a certain number of arteries, veins and microscopic erectile tissue.

Hajek emphasizes the fact that the diagnosis of rarefying osteitis is not to be made simply from the occurrence of osteoclasts. A few osteoclasts may exist on the bony framework of the normal middle turbinate and the ethmoid labyrinth. The erosion, however, of the whole bony trabeculi and, finally, their total destruction is a condition which never occurs under ordinary circumstances.

It is difficult to say why in one case hypertrophy of the bone predominates and in another absorption. It is possible that the inflammatory infiltration which penetrates the substance of the turbinates may lead in some places to stasis from compression of the veins. On the other hand, a congestion of the periosteum excited by the infiltration may produce hypernutrition and thus give rise to the hyperplastic growth.

[THE DISCUSSION IS UNDER SECTION DISCUSSIONS.]

THE LOCALIZATION OF THE MOTOR AREA BASED ON EXACT FARADIZATION.*

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PHILADELPHIA.

Faradization of the cortex is a scientific procedure unaccompanied by the slightest danger to the individual operated on. Valuable data concerning cerebral localizations have been obtained by various observers from faradization. The former results obtained by Hitzig, Ferrier, Horsley, Beevor and others can not at present be considered as absolutely accurate in view of the bipolar method which, as it was pointed out by Grünbaum and Sherrington, led to errors in localizations: diffusion of the electrical current caused a simultaneous stimulation of centers other than those experimented on. With the advent of the unipolar method advised by Grünbaum and Sherrington this difficulty is obviated and we are now able to obtain more accurate cerebral localizations.

The question of the exact delimitation of the motor area is, for obvious reasons, one of unusual interest and importance.

Pathologic material is not wanting for the demonstration of the approximate existence of the motor area, but as for its exact seat measured in inches or centimeters there is no depending on tumors, hemorrhages or other lesions, as they usually cover a more or less large area.

There is a tendency at the present time to limit the motor cortical center to the ascending frontal convolution and to the Rolandic fissure, in contradistinction to the old classic view according to which the motor area consists of both Rolandic convolutions. This more recent orientation dates from Grünbaum and Sherrington's experimental observations on anthropoid apes, in whom they found by means of faradization that "the motor area extends in front, but never behind the sulcus centralis."[1]

Since then other investigators experimented in a similar manner on human brains, while the latter were exposed for surgical procedures. Krause, Rothmann, and Brodman abroad, Mills, Frazier, Lloyd and Cushing in this country—all are inclined to accept the English physiologists' view. Although they all arrived at the same conclusion, the number of observations are as yet too few to draw, I believe, positive conclusions as to the erroneousness of the old conception of the motor area.

FIRST CASE.

My personal investigations concern two cases in which I followed strictly the same rules as the above-mentioned observers. The results were similar, but not absolutely identical to those of others.

The first case concerns a boy (J. H.) of 16, who at the age of 14 fell off a platform and struck the right temporal region. He was unconscious at first and then during the following five days had several attacks of loss of consciousness. There was a serous discharge from the nose which was soon followed by blood. The seat of injury was swollen and painful on pressure. Three weeks after the accident he began to have attacks of petit mal and then attacks of Jacksonian epilepsy, affecting left arm and leg. As the latter were invariably confined to the same side, an operation was decided on. An osteoplastic flap uncovered the right motor area which was found intact. Dr. F. T. Stewart followed in this case the plan of other surgeons of the Jefferson Hospital in cranial measurements for determining the seat of the Rolandic fissure. A cord is placed between the glabella and inion and from its center a perpendicular line is drawn. The latter corresponds fairly accurately to the sulcus centralis. When the cortex was uncovered, the central fissure could easily be detected with both convolutions on either side.

In applying faradization I endeavored to surround myself with the same precautions as other investigators did. The apparatus was the usual large size dry cell faradic battery; one electrode was extremely small and pointed, the other was a sponge of 6 inches square with a handle. The end of the pointed electrode was covered with an extremely thin layer of absorbent cotton and during the experiment held perpendicularly to the cortex. The current was turned on very cautiously and first tested in my hands. When a slight tingling was felt and very slight contraction of the muscles of the fingers produced, the electrodes were transferred to the patient.

Cushing[2] advises to avoid deep narcosis, for then so strong a current is required to produce responses that several centers are likely to be stimulated at once and a complex spreading movement is produced. On the other hand, he says, if the degree of narcosis is too light, voluntary movements may confuse the observation. The other suggestion made by him is to puncture the membrane over the sulcus: the cerebrospinal fluid will escape, the membrane will settle down close to the cerebral surface; otherwise the electric stimulation will

* Read at the meeting of the American Neurological Association in Washington, May 7-9, 1907.

1. Proc. Royal Soc. of London, lxix, 1902.
2. N. Y., Med. Jour., 1907, 166.

spread and lead to erroneous conclusions. Lloyd, in his experiment,[3] made the first faradic application to the precentral convolution, as excitation of postcentral convolution seems to him to act as a reinforcement to the precentral. Mills, on the contrary, applied the electrode first behind the fissure, for if it is done in reverse order "it is quite possible that one might get a response from postcentral convolution, when no response would have been obtained had the electrode been applied first to this convolution."

I have followed Cushing's and Mill's suggestions. The indifferent electrode was thoroughly saturated with a warm salt solution. The small and thin electrode was held firmly in the hand and gently applied to the cortex. At first the ascending parietal was touched through its entire length and near the central fissure. Slight contractions were obtained in the arm when the largest portion was irritated, the leg also would twitch when its upper angle was touched and the face when the lower angle was excited. The same application then was made at some distance from the fissure, contractions also were obtained, but in a milder degree. When the electrode was placed in the sulcus the contractions became more pronounced. Finally faradization of the ascending frontal very near the sulcus gave the same results as that of the sulcus itself. The entire transverse diameter of the anterior convolution gave contractions in the limbs. In comparing the degree of contractions at various distances from the sulcus, I will say that in both convolutions the contractions were more marked when the faradization was made very near the sulcus and less marked when at some distance from the sulcus. The interesting fact is that, while the same current gave by far greater contractions when applied to the fissure and ascending frontal, it nevertheless was capable of exciting the postcentral convolution, though to a much milder degree. The faradization was witnessed by the surgeon, Dr. Stewart, his assistants and Dr. William J. Dugan, who made notes in the course of my experiment.

SECOND CASE.

The second case is that of a boy of 16 who at the age of 13, without any apparent cause, developed convulsions on the left side. At the time of his admission to the Jefferson Hospital he had frequent attacks of epileptic seizures, confined to the left arm, neck and face. In view of the strictly localized convulsions an operation was undertaken by Dr. J. C. Da Costa. An osteoplastic flap revealed dilated and tortuous veins over the arm center, reminding one of angiomatous vessels. The faradization was conducted with the minutest precautions and exactly in the same manner as in the first case. Here I observed an extraordinary anomaly. Faradization produced contractions on the same side of the body and at no time on the opposite side. A half dozen applications to the precentral or postcentral convolution and the fissure invariably gave responses on the corresponding side of the body. This anomaly can be explained on the ground of absence of decussation. What also is interesting is the relative responses to faradization of the various portions of the classic motor area. While the irritation of the ascending frontal convolution and of the sulcus centralis gave more pronounced contractions in the limbs than that of the ascending parietal, nevertheless irritation of the latter was not indifferent; mild twitching of the limbs was evident.

COMMENT.

The two cases seem to prove that the motor area is not confined to the precentral convolution and the sulcus, but extends also to the postcentral convolution, although to a much milder degree. If Mills and others believe that faradization in man enables us to determine with exactness the delimitation of the motor centers, what is the reason of the discrepancy in the results of their experiments and mine, especially when precautions in carrying out the experiments were taken on both sides equally well? The subject is, therefore, reduced to the question of whether the electrically excitable area is identical to the motor centers of the brain. Rothmann[4] cut the decussation of the pyramids in apes. The electrical irritation of the limb centers had entirely disappeared, but the motor function of the limbs was intact. In some of the monkeys he excised a small portion of the arm centers and through some error in handling the wound an infection set in, which became a source of irritation to the remaining portion of the arm center. This ape had typical Jacksonian epilepsy in spite of the fact that electrical irritation was not obtainable.

Krause, according to Rothmann, found that in some of his cases in which an operation was done he could no more faradize, and still typical epilepsy occurred. He also found that in one case after the excision of the precentral convolution epileptic seizures still occurred. Finally, Rothmann himself observed that in total extirpation of the entire ascending frontal convolution the posterior was sufficient to produce movements of the extremities.

These facts prove, I believe, conclusively that the results obtained from faradization of the cortex can not be considered as an absolutely reliable means for an exact and precise delimitation of the motor center; the motor region is more extensive than faradization seems to prove.

Finally, if it is permissible to draw inferences from cortical irritation by means of electricity, the ascending parietal convolution participates in formation of the motor area, although to a lesser degree.

3. THE JOURNAL A. M. A., Dec. 15, 1906, 1976.

THE DIAGNOSIS OF PERFORATION OF THE BOWEL IN TYPHOID.*

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In the bowel perforation of typhoid fever and the bowel perforation of appendicitis we have, in a measure, allied surgical conditions. They are similar in that both result in peritonitis by the extravasation of the bowel contents into the peritoneal cavity. They are also similar in that the locations of both are, under ordinary circumstances, in the right iliac fossa. Given these anatomic similarities, why is the one so uniformly fatal and the other so uniformly successful in its issue? The surgical indications and the principles of treatment are identical, consequently, the conclusion necessarily follows that were the cases of perforation of the bowel in typhoid all accorded the prompt and active surgical care that a perforated appendix receives the outcome would be different.

To be sure, the patient with typhoid is seriously handicapped by the already existing typhoid infection, but that in itself, unless of serious degree, is no contraindication to operation. Cushing even goes so far as to advance the opinion that the operation and its anesthesia tend to terminate the attack of fever.

* Read before the Surgical Section of the Academy of Medicine of Toledo (O.) and Lucas County, May 17, 1907.

4. Berlin. klin. Wochschr., 10, 1905, 272.

The mortality without operation is close to 100 per cent. and may be so stated, so there is everything to be gained and absolutely nothing to be lost in following out rational surgical procedures. Of the 400 cases of operative treatment the literature affords, 25 per cent. have recovered, which is, of course, a clear gain of 25 per cent. It has been statistically demonstrated by Harte, Briggs, Taylor and others that the death list annually within the United States from typhoid perforations runs from 8,000 to 16,000. Comparing these figures, one is forced to believe that a large number of lives are needlessly sacrificed each year.

Immediately the question arises, why does such a condition exist? In answer, the conclusion inevitably follows that the vast majority of cases are either not diagnosed or are diagnosed at such time as operation is hopeless and not recommended. There are mitigating circumstances, to be sure.

In the first place, the text-books are not sufficiently lucid on the subject of bowel perforation in typhoid to give the practitioner a comprehensive diagnostic grasp of the subject, nor does his relatively limited experience compensate for the insufficiency of the text-books at his command. In the second place, perforation occurs during the course of a disease the progress of which presents an infinite number of variations due to an infinite number of causes, which in itself severely tries the very best of diagnostic acumen. Typhoid stupor, for instance, renders all subjective symptoms unavailable, and consequently forces the objective signs and the observations of those in bedside attendance to become the mainstays of diagnosis. Unfortunately, these diagnostic aids are more frequently the indications of the developing peritonitis rather than the perforation which produces it, and then the surgeon hesitates to operate.

Manges has been quoted as follows: "Most physicians expect too many and too pronounced symptoms for an early diagnosis of perforation, for the appearance of which they often sacrifice the golden time for successful operative interference." There are a number of symptoms and signs which, when present, make reasonably certain the existence of the perforative lesion. However, discretion formulates this rule: When in doubt as to diagnosis, operate and then diagnose. This teaching was endorsed by the respected Mikulicz as far back as 1884, when he wrote: "If suspicious of a perforation, one should not wait for an exact diagnosis and for peritonitis to reach a pronounced degree, but, on the contrary, one should immediately proceed to an exploratory operation, which in many cases is free from danger."

The wise physician regards all typhoid patients as liable to bowel perforation, especially if the course of the illness be characterized by severity, distension or hemorrhage. But it does not necessarily follow that all such patients will have perforation. In a series of seventeen Woolsey[1] observed that in the majority the previous course of the disease was that of typical typhoid and not unusually severe.

While the character and severity of the infection do not necessarily signify a predisposition toward perforation, they may mask its onset to such extent that its symptoms are overlooked, leaving the increasing magnitude of the abdominal distress to make the diagnosis of a well-established peritonitis disgustingly apparent. In patients already suffering with abdominal pain originating in other causes this is particularly true. It is then, indeed, difficult to determine when the pain of the perforation is added to the already existing sensation.

PAIN.

Abdominal pain is the most constant and reliable indication of perforation that the lesion produces, depending, to be sure, on the mental condition of the patient and his appreciation of the sensation. In Manges' series of 19 cases abdominal pain was the first symptom to appear in 14. In 2 of them, however, it was accompanied by a chill and in 2 others by vomiting. Though not the initial symptom, it was present in 17 of the 19 cases.[2]

The pain varies in degree, character and location. It may be so severe as to force a cry from a comatose patient, and, on the other hand, so mild as to attract but slight or no attention from a conscious patient. It may start as a sudden, sharp, stabbing and agonizing sensation, or it may come on gradually. Its duration varies equally as much. It is usually circumscribed and located in the lower part of the abdomen near the median line or toward the right side, and, generally speaking, the more circumscribed it is the more keenly it is appreciated. Occasionally it is referred to the umbilicus and other parts of the abdomen, or even to the penis. If it be general at the start, as it sometimes is, it may in the course of a short time become confined to the lower portion of the abdomen. On the contrary, if it primarily be localized and later become general, it is strongly suggestive of progressing peritoneal infection. The value of pain, however, as a symptom lies not so much in its limits, its severity, the manner of its appearance and its persistence, as in the fact that the pain itself is present. Its modifying features, when present, may be weighed in proportion to their degree, but when absent may be ignored in arriving at a diagnosis.

TENDERNESS.

Tenderness on pressure, being closely allied to pain, may be considered in the light of a less-marked manifestation of that sensation. It usually accompanies pain and not infrequently is present when actual pain is absent. In location it obviously is found within the same confines as is pain, but perhaps within more narrow limits. Thus, diffuse pain is occasionally associated with a localized tenderness. This feature renders the symptom of value in determining the approximate location of the lesion. However, as such it is not without fallacy, as tenderness is sometimes present where no perforation exists and absent in the presence of perforation. A widening of the sensitive area may be taken as indicative of spreading peritonitis, even with greater reliability than in the case of pain. The value of tenderness as a symptom is enhanced, needless to say, by its characterizing features, but, as is true of pain, its real value lies in its mere presence.

FACIES.

The change in the facial expression is an interesting symptom, though of variable worth. It might poetically be expressed as an index of the agony of the soul; this, perhaps, because of the vagueness of its origin and the inability of the conscious patient to express his feelings. He seems to realize some awful catastrophe has happened and is possessed of apprehension, which manifests

1. Ann. of Surg., May, 1906.

2. THE JOURNAL A. M. A., April 1, 1905.

itself in an apprehensive countenance. The change of expression is distinct and marked, but hard to describe and easy to recognize. The French, so versatile of tongue, consider it a weakening of the expression, and call it an "abatement" of the countenance. Unmistakable as this symptom is when present, its absence may be disregarded in making a diagnosis.

SHOCK.

Physical depression in the form of systemic shock is always present. It matters not whether the patient be conscious or otherwise, as the reaction to shock is distinctly physical, not mental. Its apparent severity is inversely in proportion to the severity of the typhoid infection. If the patient be already seriously depressed by the constant series of typhoid shocks which the disease itself produces, the susceptible margin of vitality remaining may be so small that the system will not respond to the shock of the perforation. Murphy contends there is little or no depression immediately following perforation, but that it comes later as a result of septic peritoneal infection. Considered in this light, it is an extremely unfavorable symptom. Woolsey regards early collapse as an indication of hemorrhage, which may be a very possible associate of perforation.

Expressions of shock are seen in the general condition of the patient, the drop in temperature and the changes in rate and character of the pulse. This is a typical picture: The pallid skin—cool and suddenly perspiring, the pinched facial expression with the lips slightly cyanotic, finger nails blue and muscles twitching, fall of temperature, and a small, rapid pulse. It is a symptom the import of which there is no mistaking, but, like many other symptoms of typhoid perforation, its presence embellishes the whole picture, but its absence in no wise diminishes its completeness.

SWEATING.

This is present as an element of shock. Its value, however, as a symptom is naturally as debatable as is the value of shock. Harte regards it as important, and says that "either alone or accompanied by the pain of perforation, and followed by a fall in temperature, sweating in itself is always a significant fact." It may be profuse and general, but is more often confined to the head and neck. Being of the cold type, it gives to the touch a very disagreeable, clammy impression, and is significant to the observer of the seriousness of the patient's condition.

TEMPERATURE.

Likewise an element of shock, a falling temperature succeeding abdominal pain of the type before described may be regarded as evidence corroborative of an intestinal perforation, but not preceded by the pain is more strongly indicative of hemorrhage. Absence of a temperature drop negatives the value of the symptom absolutely, and, as there is some question as to its frequency, this alteration in temperature as an indication of perforation may be largely overlooked. Rising temperature, on the other hand, points with a fair degree of certainty toward a spreading of the peritoneal inflammation, which inevitably follows the perforation.

PULSE.

Changes of pulse are most important and demand a far greater consideration than do the other symptoms which, accepted as a whole, represent the present conception of shock. These changes are in rate and pressure.

RATE.

Authorities are one in the opinion that a marked increase in pulse rate may be promptly expected after perforation. A pulse running the average typhoid rate of from 80 to 100 beats a minute usually rises rapidly to from 120 to 140. Such a rise may occur in a surprisingly short space of time, and not infrequently is accomplished in ten to fifteen minutes after the onset of the pain. If the patient be laboring under a serious infection, of which a rapid pulse is already an established symptom, the increase in rate will be relatively small. It may be so small as to escape observation by the casual attendant, but to the one familiar with the daily condition the change will be evident. This increase of pulse rate is not limited by any means to perforative cases. Indeed, as an indication of hemorrhage it is uniformly present. Its onset, however, in the instance of hemorrhage, is gradual and its maximum slow in being attained, and in these it differs strikingly from the sharp ascent to the maximum present in perforation.

PRESSURE.

With the increase of rate there is a fall of blood pressure, which manifests itself to the palpating finger as a low tension and easily compressible pulse. The minimum of pressure is reached coincidently with the maximum of pulse rate. This is obvious, as the falling pressure determines, to a certain extent, the rising rate; and logically the discussion of pressure should have priority, but its precedence is not recognized clinically, where the instrument of precision is commonly the "tactus eruditus" of the attendant's finger.

The fall of pressure is transitory and, indeed, but rarely observed. This is explained by the fact that the shock effect, of which the pressure-fall is a part, is soon displaced by a toxic effect, of which a pressure-rise is a part, arising from the absorption of the products of the peritoneal infection. The promptness with which the pressure begins to rise and continues and the height to which it goes are determined by the virulence of the infecting organism, the rapidity of the peritonitis in spreading and the reactionary power of the individual.

It becomes apparent that were the fall of pressure discernible under ordinary circumstances it would be the more important symptom, so far as alterations of pressure are concerned, as it more accurately marks the actual time of perforation. The rise is significant of the peritonitis, and as such should be regarded as evidence confirmatory of the perforation.

As a matter of fact, the usual findings are a marked and rapid rise, occurring in sharp contrast to the normal typhoid pressure, which is very low. Crile made a series of observations in which he ascertained the mean pressure of 115 cases of ordinary typhoid to be equal to 115 mm. Hg. in the first week of the disease, 106 mm. in the second, 102 mm. in the third, 96 mm. in the fourth and 98 mm. in the fifth. He found that typhoid patients having perforations developed a high pressure, which went as high as 208 mm. in one case.

These pressure effects are wholly unreliable unless considered strictly in conjunction with the previous pulse conditions of the patient.

LEUCOCYTOSIS.

As a symptom of perforation leucocytosis has no value whatever. As a symptom of peritonitis it is fairly certain. In cases where it is present it makes its appear-

ance from one to six hours after the first attack of pain and gradually increases, sometimes going as high as 50,000, an exquisite contrast to the low count of 6,000 to 7,000 so uniformly present in typhoid. Frequent observations in doubtful cases may lend the symptom some value as corroborative evidence. In such a lesion, however, where prompt operation means so much, time spent in waiting for corroborative evidence to develop is time fatally lost.

It may be mentioned in passing that there is a disproportionate increase of polynuclear neutrophiles in peritonitis; that is considered by some to be more reliable than the general increase in number of the white cells. But so far as the diagnostic worth of this increase in polynuclears is concerned, little need be said. It is on a par with the general leucocytosis and just as limited in its scope.

MUSCLE SPASM.

Rigidity of the whole or part of the abdominal muscles is the most valuable of the physical signs of perforation. The worth of the sign lies in the fact that it is a reflex having origin in the peritoneal irritation, for which the perforation is immediately responsible. In this it is free from the restrictions thrown about the valuable symptoms—pain and tenderness—and it matters not whether the patient be conscious or otherwise. In fact, unconsciousness rather enhances its value, as voluntary rigidity, which is by no means infrequent, is then eliminated.

Muscle spasm is usually present where there are abdominal pain and sensitiveness. It is often general, but when so the resistance is apt to be accentuated in the portion of the wall in communication reflexly with the lesion, which in most cases is in pretty close relation to McBurney's point, or it may be entirely localized. On spreading of the peritonitis, localized rigidity will become general. The usefulness of the symptom is somewhat limited by pre-existing resistance that is frequently present in ordinary cases of typhoid. In cases where such exists, skilled examination will demonstrate the added resistance due to the perforation. It goes without saying that a knowledge of the previous condition of the patient is essential for the proper interpretation of muscle spasm.

ALTERED RESPIRATION.

The patient is quite apt to feel short of breath, and it will be noted that the abdominal type of respiration is nearly eliminated. If it should be present its appearance is rather characteristic, in that the more or less rigid abdominal wall moves as though hinged on the pubes. The mechanism of this alteration in respiration is similar to that of muscle spasm and may be regarded as an effort on the part of Nature to protect the already injured parts from further injury. The rate of respiration is nearly always increased.

DISTENSION.

The fact that distension and tympanites are so frequently present in typhoid running a comparatively normal course places this symptom in a position of slight consequence. If, however, gas can definitely be proven to exist within the peritoneal cavity it is positive evidence of perforation. Diminution of liver dulness is the sign usually interpreted as meaning the presence of gas within this cavity, but inasmuch as a distended colon, or even the small intestine, is capable of inducing such diminution, it readily becomes apparent that the sign possesses no reliability; consequently its presence should influence the physician no more than to arouse suspicion.

NAUSEA AND VOMITING.

These so frequently are present in severe cases without any apparent cause that they alone can not be regarded as indicating perforation. If they occur for the first time in relation to pain within the abdomen, either before or after it, they assume some importance. If violent, vomiting may in itself predispose toward perforation.

DIFFERENTIAL DIAGNOSIS.

Other complications of typhoid fever that are capable of simulating perforation are appendicitis, suppurating mesenteric or retroperitoneal glands, intestinal obstruction, intestinal hemorrhage, iliac thrombosis, cholecystitis, diaphragmatic pleurisy and pneumonia. The discussion of these need not be taken up in detail, for in typhoid perforation the all-important question is not so much one of differentiation as it is of decision. It matters not so much what the complication may seem to be if what is a surgical lesion be recognized as such and promptly be accorded its proper treatment. This is true of appendicitis, peritonitis attendant on rupture of suppurating glands, intestinal obstruction and cholecystitis as well as of perforation.

If hemorrhage be suspected, its differentiation from perforation is obviously of the utmost importance and, likewise, of great difficulty. About half the hemorrhage cases have more or less pain, which complicates, to be sure, the diagnosis. Offsetting this is the relative slowness with which shock appears in hemorrhage as compared with that in perforation. The same may be said of the alterations in pulse, more particularly of its rate. These differences, however, are entirely relative and not always of assistance. The difference in blood pressure is rather more striking in that hemorrhage lowers it, while the peritonitis of the perforation moves it strongly in the opposite direction. But this is a relatively late differentiation, and by that time a leucocytosis may have developed, meaning peritonitis, or perhaps a diminution in the red count and hemoglobin index, meaning hemorrhage. Still later the presence of blood in the stool will settle the question beyond a doubt. That for the diagnosis; but the wise man when in doubt will feel justified in diagnosing perforation rather than hemorrhage, for the gravity of delay in perforation exceeds by far that of exploration.

There is just one point that distinguishes an iliac thrombosis, and that is the presence of tenderness in the groin and a short distance down the femoral vein. This should be borne in mind.

With pleurisy and pneumonia differentiation is quite important, for it would, indeed, be deplorable needlessly to subject a patient suffering with these complications to an operation. If the usual signs be present within the chest there need not be a great deal of doubt, but if they are absent or are obscured there is imminent danger of making the mistake.

CONCLUSIONS.

Unfortunately there is no one symptom, nor syndrome, the presence of which indicates with certainty the existence of perforation. The diagnosis must be based largely on the judgment of the physician who has followed the daily variations in the course of the illness and become so familiar with its general progress that

he subconsciously recognizes the change brought about by the perforation. And herein must the surgeon, seeing the case for the first time, accept the opinion of the physician.

The three cardinal symptoms are these: Suddenly-appearing abdominal pain, rigidity of the muscle wall and tenderness on pressure. When these appear in the course of any case of typhoid fever the assumption is warranted that perforation has occurred, and operation is not only indicated but demanded.

Clinical Notes

ECTOPIC GESTATION—A REPORT OF TWO CASES.

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CASE 1.—Tubal pregnancy; rupture within the broad ligament. Case mistaken for acute perforating appendicitis. Operation, hysterectomy, recovery.

History.—On Aug. 21, 1906, I was called in haste to see Mrs. M. L., widow, aged 28. I found her in bed in much distress and obtained the following history: While walking downtown about 10 a. m. that morning she was taken suddenly ill with a severe pain in the lower abdomen, most marked on the right side. She became very faint and fell to her knees and was unable to rise to her feet for some minutes. She continued her journey downtown, but on account of pain and weakness was obliged frequently to sit down. After doing her errand, she took a car to her home; the car left her within four blocks of her house. One-half hour was consumed in traversing this distance owing to pain and faintness. She immediately went to bed and had remained there until I saw her at 7 p. m. the same day.

Examination.—Pulse, 160; temperature, 103 F.; respiration, 40. The face had an anxious expression and was pale. The abdomen was distended and very sensitive over the lower portion. She had vomited several times during the afternoon. She gave a history of former attacks of pain in the lower abdomen, more characteristic of pelvic than appendiceal trouble. A pelvic examination revealed nothing but a very sensitive condition of the pelvic organs and tissues.

Sexual History.—She menstruated before the age of 13 years. She was normal in this respect during her single life. She married at 20 and has had four children at term and two miscarriages. The labors were normal. Two children died in infancy. The miscarriages occurred between the births of the children. Two years ago had an eruption on the face and forehead in the papules of which pus formed, then scabs. When the scabs fell off, the skin was left disfigured by large deep cicatrices. She took constitutional and local treatment for nine months at this time. She denies specific disease. She menstruated last during the first week of July. The August period did not appear.

Diagnosis.—Fulminating appendicitis, with rupture of the appendix and septic peritonitis.

Treatment.—Her condition was such as to preclude operation, but she was sent to the hospital for treatment. I expected her to die, but after several days she began to improve. Her pulse grew slower and stronger and the fever gradually subsided; the distended and sensitive abdomen improved. In the hospital she flowed four days and flowed irregularly after leaving the hospital for two weeks.

Subsequent History.—She returned to her home September 6 after being in the hospital 15 days, and I congratulated myself on not operating on a case of appendicitis that in that stage would certainly have proved fatal. She was requested to return in a few weeks for examination and operation.

About three weeks later she came to my office. An examination revealed a mass about the size of a full-term fetal head lying behind and above the pubes, occupying the position of a pregnant uterus, extending laterally into the left pelvis. It simulated very perfectly a myomatous uterus. I immediately revised my diagnosis.

Second Diagnosis.—Tubal pregnancy with rupture into the broad ligament.

Treatment.—I sent the patient back to the hospital at once and two days later (Sept. 27, 1906) operated on her. The incision was central. A large hematoma occupied the broad ligament space and had pushed up the peritoneum in front of and around the uterus. Portions of the parietal wall and omentum were adherent to the mass. The peritoneum was incised over the mass and a large quantity of firm blood clots was scooped out with the hand. What appeared to be one of these clots was felt by the hand and crushed between the thumb and fingers. Immediately there was an alarming gush of arterial blood that could not be controlled by pressure or by sponge packing. I removed the left hand from the sac occupied by the hematocele and thrust it down into the pelvis behind the uterus and raised the entire pelvic contents up toward the abdominal incision, thus rendering the broad ligaments taut, completely controlling the hemorrhage. While held thus, the other hand cleared away the blood clots so that the field could be inspected. I thus discovered that the hematoma had so impinged on the blood supply of the uterus that the uterine walls had become friable and crushed between my fingers.

The broad ligaments were then clamped and ligated and the uterus removed by the usual method of amputation above the cervix. The left ovary was not removed. Gauze and tube drainage were employed for four days. The patient made a rapid and uncomplicated recovery.

Later History.—I saw this patient, who now lives in Chicago on March 22, 1907. She is in excellent health; has gained 15 pounds since her operation. She menstruates every 28 or 30 days, at which time she has some pelvic pain. She has married again and says that her only worry is that she may again become pregnant, a matter about which I was able to put her mind at rest. On examination I found an unusually long uterine stump, the probe entering the cervix to the depth of three inches. It is probably owing to this fact and that one ovary still remains that the patient has this phenomenal menstruation.

Dr. Maximilian Herzog, who examined the tissues removed, reported as follows:

The specimen proves the correctness of your diagnosis, namely, hemorrhage into the broad ligament from ruptured tubal pregnancy.

The mass consists of tissues of the tube and ovary, old coagulated blood, blood derivatives and fibrin, and included in these masses degenerated chorionic villi. The latter proves beyond any doubt that an ectopic gestation had existed.

DIFFERENTIAL DIAGNOSIS.

In ectopic gestation with rupture of the fetal sac we have as the three cardinal symptoms: (1) Sudden pain in the lower abdomen; (2) subnormal temperature (when blood extravasation is great) or no increase of temperature and, (3) acute anemia.

When I saw the patient nine hours had elapsed since the time of the beginning of her illness and she presented the four cardinal symptoms of appendicitis given by Dr. J. B. Murphy:[1] (1) Sudden pain in the abdomen; (2) nausea or vomiting; (3) general abdominal sensitiveness most marked on the right side; (4) elevation of temperature. But the important thing in the differential diagnosis was the nine hours that had passed from the time of the beginning of the attack to the time I first saw the patient, a matter that did not receive proper recognition.

In that length of time she had partially reacted from the shock caused by loss of blood and traumatism to the peritoneum and a limited peritonitis had become es-

1. Murphy (J. B.): Two Thousand Operations for Appendicitis, The Amer. Jour. Med. Sci., August, 1904.

tablished, so that instead of a normal or subnormal temperature, there was an elevation of temperature of 4.5 degrees.

Another most interesting point in the case is the character of the hematoma, i. e., its assuming such a relation as to interfere with the blood supply of the uterus, causing disintegration of its muscular tissue and at the same time simulating so perfectly in its position and consistency a fibroid uterus.

It is interesting to speculate on what the outcome of such a case might be without surgical interference.

In many parts of the body less favorable to absorption, hematomas are completely decimated. An early rupture into the broad ligament is one of the most favorable conditions for recovery without interference, especially if the rupture is accompanied by the death of the embryo. But when a hematoma is formed in this manner it must be remembered that the sac enclosing it communicates with the Fallopian tube, within which may be harbored pathogenic bacteria, and this tube in turn may, and usually does, communicate with the uterus and through the uterus with the external world.

It may be said, therefore, that the hematoma, which is an excellent culture medium, is subjected in a greater or less degree to infection by micro-organisms finding their way through the uterus and Fallopian tube or from the intestines, and the patient may locally or constitutionally be infected through an abscess thus formed.

In this particular case the operation demonstrated an unusual condition of things. The nutrition of the uterus had been so seriously interfered with that the muscular tissue had undergone grave degenerative changes. Whether this breaking down of the uterine tissue would have ultimately resulted in forming a communication between the folds of the broad ligament and the uterine cavity and thus permitted the expulsion of the disintegrated hematoma and the products of a tubal pregnancy is a matter of conjecture.

Observers have reported that even the bones of the fetus have been expelled through the uterus, rectum perineum, gluteal muscles and abdominal wall. A case of the fetal sac adhering to and ulcerating through the uterus and discharging bones into the vagina is that of Bertino's referred to by Dr. Heineck.[2] The rest of the bones were removed by laparotomy eighteen months after the death of the fetus.

The efforts of Nature to remove the products of an ectopic gestation have been so faulty, and the dangers to the mother are so great, that we are justified in operating even if we know that some of the most favorable cases recover without interference. In fact, surgical interference is demanded in the light of to-day.

CASE 2.—Mrs. F. H. On Feb. 12, 1904, I operated in a case of ectopic gestation, the principal features of interest being that the patient had been ill for a week from extensive hemorrhage into the abdominal cavity and the gestation sac was found engrafted into the infundibulum and fimbriated extremities. The patient recovered.

ETIOLOGY.

The observations of Dr. J. Clarence Webster on the etiology of ectopic gestation are of interest. He claims that the idea of early writers of a mechanical interference to the advancement of the ovum toward the uterus being the cause, has no foundation of fact. He says:[3]

In 1895 the author pointed out that these views were largely speculative. He showed that, while frequently these mechanical factors might be associated with ectopic pregnancy, there was no proof that they were the ultimate factors in its causation. He demonstrated the existence of the decidual reaction in the tubal mucosa in all cases of tubal pregnancy, and advanced the view that the fertilized ovum could develop only on tissue capable of undergoing a genetic reaction. Normally in the human female this reaction, occurring as the result of fertilization, takes place in the mucosa of the uterus. Its occasional occurrence in other parts derived from the Müllerian tract, i. e., Fallopian tubes, is to be regarded as a reversion in these tissues to an earlier mammalian type either in structure or in reaction tendency. The fertilized ovum coming in contact with any portion of the Müllerian tract capable of establishing with it the relationship necessary to its development may become attached and grow just as readily as if it were lodged in the uterine cavity. . . . It is, however, an unjustifiable assumption to hold that the ovum, if simply obstructed in its downward movement, may develop in a tubal mucosa that is perfectly normal or altered by inflammation. . . . The author strongly holds that there is no proof whatever that ectopic pregnancy begins its development on any other than Müllerian tissue. . . . In the rare condition of ovarian pregnancy it is not at all unlikely that the presence of Müllerian remains in the ovary may determine the site of pregnancy in this organ.

Certainly such views are in accord with the generally established principles of evolution.

If the determining factor in ectopic pregnancies were only a mechanical one the condition would be seen much more frequently than it now is. Furthermore, the mechanical factors that would interfere with the progress of the ovum downward would also be likely to interfere with the advancement of the sperm cell along the tube and be the determining factor in the production of sterility.

Undoubtedly, ectopic gestation occurs much more frequently than is generally supposed. Many obscure cases of illness in women in times past would to-day be attributed to this cause.

Like every other malady in the catalogue of diseases, it becomes more common as we become more proficient in the art of recognizing it. In every woman capable of impregnation a sudden attack of pain in the lower abdomen, faintness, acute anemia and nausea without elevation of temperature, should raise the question of the possibility of this condition in the mind of the physician.

2. Heineck (Aimé Paul): The Terminations and Treatment of Extrauterine Pregnancy, with a Report of Thirty-Two Cases Treated at the Cook County Hospital, Surg., Gyn. and Obst., March, 1906.

3. Webster (J. Clarence): Text-book of Diseases of Women, p. 643.

A METHOD OF PRESERVING AND FILING MEDICAL RECORDS

BY MEANS OF SPECIAL ENVELOPES OR POCKETS.*

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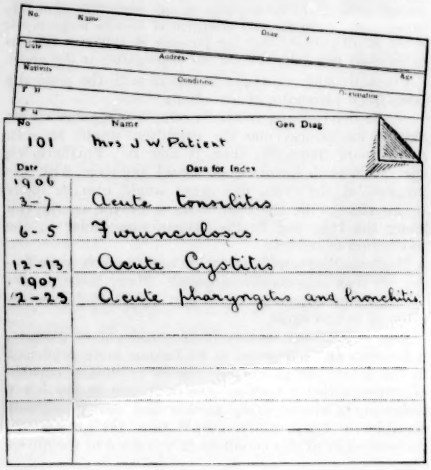
No one will deny the advantage, I might even say the necessity, of keeping a careful record of medical cases. Such records are now kept with more or less care in most hospitals and dispensaries, as well as by many physicians in private practice. It is probable, however, that most practitioners are lax in this respect, especially in cases seen away from their offices, largely, no doubt, for the lack of a convenient system. In this paper I will confine myself principally to the methods of preserving

*Read at the Northwestern Medical Society of Philadelphia, March 4, 1907.

clinical records, referring only briefly to the filing of reprints, clippings, etc. Medical accounts should, in my opinion, be kept entirely apart from bedside notes and, therefore, will not be referred to in this connection.

The book system of keeping records has a few, and only a few, undeniable advantages: It is safe, i. e., individual histories can not be lost, and it is convenient for recording eye, ear, nose and throat and other special cases in which printed forms, extending over one or two pages at the most, are commonly used. On the other hand, the book is inconvenient for medical and surgical cases, because several pages with confusing cross references are commonly required, and no arrangement other than the numerical is as a rule practicable. All notes taken at the patient's house, as well as laboratory reports, charts, etc., must either be copied or pasted in. Many other objections might easily be enumerated.

Card systems more nearly approach the ideal and permit convenient arrangement and indefinite extension of the histories. Prescriptions, reports, letters, etc., must still be copied, while charts, sphygmograms and



other original records can not easily be preserved with the history. It is possible to carry the smaller cards to the patient's house, but they are always more or less in the way and are likely to be forgotten.

The system which I have devised at the suggestion of Dr. Musser is a modification of the ordinary letter folder or vertical file. The envelope I had made for him is of a standard size (10 in. by 12 in.) so that it can be used in stock cabinets with standard index guides. It is made of "paperoid," a tough and durable material, and is furnished with expansile sides so that it will hold a large number of pages without becoming misshapen. It has no flap; the back is high, to display the patient's name, etc.; the front folds down half way to afford easy access to the contents. In this pocket are placed the history cards or sheets, full size temperature charts and laboratory reports, etc. Printed forms for convenience in recording physical signs or laboratory findings can be used with this system at but slight expense.

This pocket, though an ideal filing device for hospitals and consultants, is unnecessarily large and expensive ($70 a thousand) for general use. For my own use I had small (4¼ in. by 6⅛ in.) manila envelopes made, without flaps or expansions. These are inexpensive ($7 a thousand) and can be filed away, alphabetically or otherwise, in a standard cabinet or a desk drawer. They will file with or carry the card of the corresponding size (10 cm. by 15 cm.), which I previously used for all cases and still employ for transient office patients. This is one of the few instances in which the coexistence of two systems of measurement may be utilized to advantage, the "metric" card being one-sixteenth of an inch smaller or larger than the standard sizes (4¼x6⅛ or 4x6). The face of the envelope is ruled and printed, as indicated in the illustration, for convenience in filing either according to number, name or diagnosis. The ruled spaces are for subsequent diagnosis, with dates, or for recording the prominent features of the case.

As a rule I do not carry these envelopes with me to the patient's house, but write my examination or other information on prescription blanks or tablets of convenient size so that there is never any excuse for failure to record important data. When I reach home my notes, as well as copies of prescriptions, etc., are placed in the appropriate pockets. In this way clinical notes may be kept in an accessible form with the minimum amount of clerical work.

Such envelopes may also be used for systematically preserving minor medical notes and clippings, but for reprints, articles cut from journal and articles in course of preparation nothing is more convenient than ordinary 10 in. by 12 in. letter folders. These may be arranged in a regular cabinet or a set of "transfer boxes" may be used. The latter are labeled and stored like books. A satisfactory classification is the one used by the Index Medicus. An alphabetic arrangement is also said to be convenient. The main headings are written on guide cards or on the transfer boxes, the subheads on the individual folders, which may be multiplied according to need. Abstracts usually are pasted on large sheets to prevent loss, those of similar import being grouped together. By a system of this sort much valuable material may be made immediately accessible without recourse to a library.

THE "OPEN METHOD" TREATMENT OF CANCER.

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In improvising this method an effort has been made to utilize three fundamental principles which are recognized as the best that modern medicine affords for the treatment of this class of cases.

First, enucleation of the ulcer or, if it be a case of tumor and involved lymphatic glands, the complete removal of both glands and tumor; second, drainage accomplished by leaving the wound wide open and allowing it to heal by granulation instead of closing the skin over and obtaining union by first intention; third, treatment of the open wound with the Roentgen ray.

The details of this method are carried out as follows: The patient is prepared for operation in the usual manner, with one exception. Instead of scrubbing the site of the operation a soap poultice or plain antiseptic dressing is applied and left until the patient is anesthetized.

The reason for not scrubbing is that any undue pressure on the tumor or glands may cause some of the elements of infection to be forced out into the surrounding tissue and lymphatics. The dressing or poultice is then removed and potassium permanganate solution poured over the area involved, followed by a solution of oxalic acid.

If it be a case with involved lymphatic glands the operator begins with the most remote accessible lymphatic gland and then clears away all of the glands to the tumor, in mass if possible, and finally includes the original tumor. By beginning with the most remote gland the chances of spreading the infection beyond into the neighboring glands and tissues by pressure on the tumor or glands are lessened. The entire wound is left open and allowed to heal by granulation, thus facilitating an ideal drainage of all the tissues and lymphatics in this region. A dry antiseptic gauze is then applied to the raw surface and the usual dressing placed over this.

As soon as the patient is able to submit to it a fifteen-minute exposure to the Roentgen ray is given daily until the wound is healed. When the granulations first appear in the wound the gauze dressing is removed and a dressing consisting of perforated gutta-percha tissue is applied to the granulating surface. Over this is placed a pad of moist boracic acid gauze and over all is a covering of oiled silk. This combination affords drainage by capillary attraction through the perforations in the gutta-percha tissue into the moist gauze and does away with the tearing loose of those granulations which become imbedded in the mesh of the gauze when it is applied directly to the granulating surface. The oiled silk keeps the gauze moist.

The advantages claimed for this method are the perfect drainage of all the lymphatics and tissues in the infected region and the changing of a deep or subcutaneous cancer to a superficial one. This permits the Roentgen ray more thoroughly to destroy the remaining cells or elements of infection brought to the surface by leaving the wound open. That the Roentgen ray does destroy superficial malignant growths is conceded even by the most sceptical and conservative. I have carried out this method in a series of cases during the past year.

CASE 1.—The patient had an epithelioma on the nose which had previously been removed with a galvanic needle, followed by a few Roentgen ray treatments. When seen the mass of recurrence was about the size of a bean. There was no lymphatic involvement. The enucleation was carried out Feb. 7, 1907 and the patient treated with the Roentgen ray until March 6, when a healthy scar was fully formed.

CASE 2.—The patient in this case had a carcinoma of the breast with the axillary glands involved up to the clavicle. The operation was performed Dec. 29, 1906. About two weeks after the operation a nodule about the size of a pea was felt one inch from the right margin of the sternum over the fifth rib. It grew smaller as the case was treated with the Roentgen ray. The patient went home March 4, 1907 and returned April 9, at which time the nodule was found to have attained the size of a bean. It was immediately removed and the wound healed by granulation under the ray. The growth showed no signs of recurrence in any of the supraclavicular or brachial glands and the patient has gained in weight and a healthy scar now remains where the first operation was performed.

CASE 3.—This was the case of a patient having a sarcoma covering the right buttock. The growth was about six inches in diameter and the glands in the right groin were involved. Growth and glands were removed Feb. 28, 1907 and the patient treated until March 10. At this time the wound in the groin had healed with no signs of recurrence and the surface over the buttock was covered with healthy granulations, the margins of the wound advancing toward the center with the formation of fibrous tissue.

CASE 4.—The fourth case was that of a fibro-sarcoma of the foot with enlarged femoral glands which showed some giant cells. The removal of both glands and tumor took place Dec. 24, 1906. Both wounds were treated with the Roentgen ray and were drained and the patient went home apparently cured Feb. 9. This case was examined again recently and there seemed to be no evidence of recurrence.

A number of patients in other cases similar to these herein reported have been treated in the same way, as well as one case of tubercular ulceration of the skin. All of them have so far given most encouraging results. It might be said that the time limit for recurrence in none of these cases has as yet passed, but the results have been so satisfactory that I feel it my duty to report the cases at the present time. The microscopic specimens were made and diagnosed by Dr. M. D. Hoge of Richmond, Va.

REPORT OF A CASE OF HEMORRHAGE IN THE NEW-BORN.

G. WERLEY, M.D.
EL PASO, TEXAS.

History.—Baby H., female, was born at 6 a. m., March 14, 1907 (vertex presentation). Labor lasted seven hours, the second stage being very short. The child apparently was normal in every way, and weighed 7 pounds. The cord was handled aseptically and dressed with boric acid and alcohol. The infant's father was in the last stages of pulmonary tuberculosis. The mother was healthy but gave a history of epileptic attacks. There were two other children, girls, aged 4 and 5 years respectively. With her first baby the mother had severe mastitis and the child had to be weaned when two weeks old. The second child was not breast-fed at all. The breasts were indurated in a number of places, the result of previous abscesses.

The baby was put to the breast five hours after birth, but did not nurse. At 7 p. m. it had a large bowel movement. On March 15, at 3:30 a. m. the baby vomited a little mucus. At 10 a. m. its rectal temperature was 98 F. and at 7 p. m. there was a large black bowel movement. Fours hours later there was a large bloody bowel movement and a similar one at midnight. The baby was now given rectal enema of warm milk.

March 16, at 1 a. m. I began giving the infant gelatin by the mouth. At 5:30 and 8:30 a. m. enemas of warm milk were given. Five minutes after the last enema the baby vomited brown mucus and two hours later again vomited a dark fluid. At 11 a. m. there was a small, black bowel movement, followed by a similar one half an hour later. At noon, the baby passed a bright red, bloody stool. The child at this time was restless, the temperature sub-normal, the skin pale, but warm, and the pulse rate 160 and feeble in quality. At 1:30 p. m. I gave two grains (0.13 gm.) of calcium chlorid in 2 ounces (60 c.c.) of physiologic salt solution, injecting it under the skin of the abdomen. No hemorrhage or reaction of any kind occured at the site of the injection. At 3, 5:30 and 8 p. m. there were bowel movements with dark clots. At 10 p. m. the temperature in the groin was 100.4 F. and the baby was sleeping quietly. On March 17, the child was taking the breast and nursing well. It slept nearly all night. At 3:30 a. m. and 7 p. m. there were dark green bowel movements.

March 18, at noon, the child had a small yellow bowel movement. The temperature was 98.6 F. in the rectum and the pulse 140. The child was very pale but seemed to be well. The baby left the hospital March 25, at which time it weighed 7 ½ pounds. The child was in perfect health, May 17.

In the new-born there is a physiologic cholemia and the coagulating power of the blood is diminished.[1] The

1. Richardson, Therap. Gaz., 1907, 19.

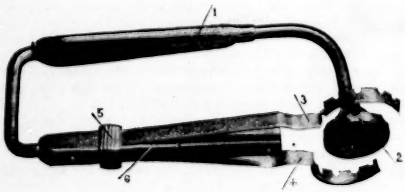
experiments of Wright and others prove that the coagulating power of the blood may be much increased by the administration of the soluble salts of calcium. Gelatin has been used with success, but it requires long sterilization to avoid tetanus. Warm milk has some value as a hemostatic, probably due to the salts of calcium in solution. But the use of pure calcium chlorid seems to me at once the most simple and most rational remedy in these cases.

A NEW PHIMOSIS CLAMP.

A. H. BOREY, M.D.
NEW ORLEANS.

The advantages claimed for this instrument are: With its use only a perfect circumcision can be performed; the glans penis is absolutely protected from injury, and the operation can be completed before removing the forceps.

The instrument may be made considerably smaller than shown in the illustration, except that the button and clamp should correspond to the size of the glans penis. It consists of six parts: 1, The handle; 2, a concave button; 3 and 4, clamps; 5, a clamp ring, and, 6, a clamp holder. The button screws on the handle and may be replaced by a larger or smaller one to suit the occasion. The clamps are so hinged that they also may be removed by closing them and sliding the clamp



ring off. The circular parts of the clamps are about one-sixteenth inch larger in diameter than the button. The button has concave depressions opposite the needle holes in the clamps which allow the needle to follow its curve. The proximal borders of the circular parts of the clamp are slightly larger in circumference than the distal borders. This permits a gradual compression of the foreskin against the button, which practically eliminates sloughing or pressure gangrene.

METHOD OF USING.

When necessary, split the prepuce to admit the button, which should be inserted within the foreskin so that the glans penis fits its concave surface. Close the clamps and tighten with the clamp ring. Should a large wrinkle form at the junction of the clamps, above or below, remove it by loosening the clamps and making several small wrinkles in the place of the large one; this will not prevent a "neat job." The foreskin and mucous membrane should always be cut as close to the distal border of the clamps as possible, using either scissors or scalpel. Only curved needles should be used for suturing.

Infant Mortality.—Probably in no other field of human activity has man's former ignorance been more lamentable in its consequences than in that of rearing children—the future parents of the race.—George B. Mangold, M.D., in *Popular Science Monthly.*

A CASE OF COMA FROM PTOMAIN POISONING SIMULATING ACUTE MENINGITIS.

ARTHUR D. DUNN, M.D.
OMAHA, NEB.

The following case was deemed worth recording, as it presents unusual and exceptional clinical features which are not mentioned in the text-books or in the literation so far as I have been able to ascertain. It was observed during my service as resident physician in Cook County Hospital, Chicago:

Patient.—T. D., a well-developed German, aged 23, single, a sailor, was admitted to the hospital in a comatose condition, at 8.30 p. m., June 4, 1903, and was assigned to the service of Dr. W. S. Harpole, with whose permission the case report is published.

History.—No history was obtainable, except that the man was picked up in an alley by the police.

Examination.—The coma was of the alcoholic type and he resisted attempts at examination. The body was rigid. There were no signs of violence. Pupils were dilated and equal; no squint. The buccal mucous membrane was normal. There was no characteristic odor to the breath. The abdomen was rigid and tender, but not especially tympanitic. The temperature was 99 F., pulse 112 and respiration 24. A complete physical examination revealed no other findings of importance.

With the possibility of poisoning in view, gastric lavage was performed. A large amount of dark brown turbid liquid was obtained from the stomach. It contained numerous oil droplets and had an odor resembling castor oil. Blood could not be detected either chemically or microscopically. Neither hydrochloric acid, nor lactic acid was found. No bacilli, arsenic, phenol or mercury were discovered. Magnesium sulphate 75 gm. was left in the stomach. Morphin sulphate 0.015, hyoscin 0.001, atropin sulphate 0.0006, were given hypodermatically. A few drams of the urine obtained by catheterization showed nothing abnormal.

Subsequent Course.—The patient remained delirious for several days and it was necessary at times to strap him. At midnight and at 4 a. m. following admission no material change in his condition had taken place. In the morning there was an involuntary passage of dejecta and urine.

Examination at 8 a. m. June 5 showed the patient's pulse rate to be 60, temperature 103.4 F., and respiration 20. The neck was retracted and the man showed signs of pain on pressure over the cervical vertebræ. There were divergent strabismus and inequality of pupils; otherwise no paralyses or focal symptoms. Eye grounds were negative. There was a hypertonicity of all the muscles, scaphoid abdomen, and apparently hyperesthesia. Kernig's sign was present but varied in intensity. The deep reflexes were all exaggerated; there was no Babinski sign. The skin had a mottled bluish tint but no petechiæ. A lumbar puncture was made and a few c.c. of a clear fluid were drawn off. There were practically no polymorphonuclear leucocytes in the fluid, and the number of lymphocytes was not increased (9,400). Cultures made from the spinal fluid remained sterile after four days. The case at this time presented a picture of acute meningitic coma. At 1 p. m. the condition was about the same. At 8 p. m. the findings of meningitis were gradually disappearing. The squint had become convergent and the inequality of the pupils was reversed. The muscles were more relaxed, and the coma was not so profound. The next morning, 36 hours after admission, the man had a markedly dierctic pulse; there was absence of the meningitic symptoms previously chronicled, and temperature was 101.8 F. He had a listless and apathetic expression, and appeared more like a typhoid patient in whom the onset had been accompanied with cerebral symptoms. A blood culture was made at the time, but proved sterile at the end of three days. During that day and the day following, there was a gradual return to consciousness, so that four days after the patient entered the hospital, all the symptoms, findings and fever had disappeared, and the patient was much puzzled as to how he had got to the hospital and as to the lapse of time. Except for an intermittent

bradycardia, some diarrhea and gastric unrest, recovery was uneventful.

History.—The following history was obtained by Dr. Charles Palen, acting junior resident to ward 6:

The patient was employed as a sailor on a lake steamer bound for Milwaukee. Three days before his entrance into the hospital, at noon, he had eaten freely of tainted meat. Shortly after the meal he became sick, he was nauseated and vomited, the bowels were very loose, and he felt oppressively weak in the knees. The same night he boarded a steamer for Chicago, and the last he remembered was that on leaving Milwaukee at midnight he was becoming rapidly worse. He knew nothing of his landing in Chicago; nothing of what happened between Sunday morning when he landed in Chicago, and Tuesday evening, when he was taken to the hospital. He did not know whether the others who ate of the same meat became ill or not. He had never had a similar attack. He denied syphilis. Subsequent examination of thorax and abdomen was negative. There was a complete mental lapsus of five days.

On the night of the patient's entrance to the hospital, from the foul material found in his stomach, from the type of coma and from the absence of distinctive signs of other disease, a tentative diagnosis of ptomain poisoning was made by exclusion with the general opinion that this was a peculiar case. Hysteria was thought of, but the character of the coma and the absence of all stigmata spoke against it. In fact, the man deported himself very much as a "drunk" who could not be aroused. Absence of alcohol in the stomach contents or on the breath excluded that form of coma. Meningitis was immediately dismissed at that time from the complete absence of any suggestive symptoms. There was nothing to determine any of the usual forms of coma; no plasmodia.

The morning after admission the striking similarity of the picture to meningitis is noteworthy. There was rigidity and retraction of the neck, tenderness of the spine, scaphoid abdomen, divergent strabismus, inequality of pupils, fever, slow pulse, general muscular hypertonicity, Kernig's sign, hyperesthesia, leococytosis of 9,400 and exaggerated reflexes. It was a serious defect that anaërobic blood cultures were not made. In one of van Ermengen's autopsies an anaërobic bacillus was found in pure culture in the spleen. It is possible that certain cases of ptomain poisoning with marked general and nervous symptoms may be due to a bacteriemia which has not yet been discovered because of the neglect to make any but the usual aërobic cultures.

The literature on coma in ptomain poisoning is singularly scanty, and I have been able to find none describing a form simulating meningitic coma. Peterson and Haines, in their excellent text-book, state that: "Ptomain poisoning manifests itself as a rule within a short time after eating. The symptoms are those of a more or less severe gastroenteritis, but evidences of extensive involvement of the nervous system are by no means infrequent." The symptomatic type of this involvement is not described. Dr. Haines in a personal letter says that various nervous symptoms are common, but says nothing of a meningitic picture. Postmortem, hyperemia of the kidneys, liver and meninges, marked fatty degeneration of the liver and brain, with punctiform hemorrhages in the latter, have been found.

Dr. R. Waterhouse[1] reports a case in which coma was the initial symptom and lasted twenty-four hours. There was no gastrointestinal disturbance, the stomach was empty. C. Mercier and Kinnard[2] also report cases in which, several hours after eating tainted meat, a rapid coma developed with stertorous breathing, itching, etc., and the patient could not be aroused. No focal symptoms were present. In none of the cases were there symptoms pointing toward meningitis. Recovery took place in all these cases. Kovacs, of Vienna, showed in his clinic a case of ptomain poisoning with petechiæ, which during its course had presented a fair picture of acute cerebrospinal fever. He stated that such cases occasionally occur and make a differential diagnosis necessary. Oertner also mentioned a similar case in a clinical lecture.

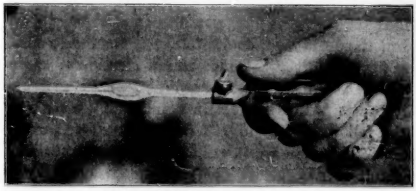
1. Brit. Med. Jour., 1906, I, page 141.
2. Ibid., pp. 258 and 280.

A PIPETTE ATTACHMENT.

A. E. HUTCHINSON, Sc.B., M.D.
Assistant in the Red Cross Hospital.
VICTOR, COLO.

For years I have been making blood examinations, and it has been my lot to fail many times to secure a drop of blood for examination, especially from very old and anemic patients; failures mean repeated attempts, which add to the pain and annoyance of the patient.

Practically all my failures were due to the manner of drawing up the blood into the pipette. Because of this I looked about for an apparatus to replace the rubber tubes and the sucking process and, finding none, attempted to have carried out some of my own ideas. After many failures I succeeded in having made the present apparatus, and that with undreamed of simplicity of mechanism.



The attachment is slipped over the end of the blood pipette and clamped into place; the roller is moved up, but preferably not all the way, to the clamp end. This makes it possible, as the illustration shows, for one hand to hold the entire apparatus and also to govern the flow of blood into the pipette, leaving the other hand free to hold the ear or finger from which the blood is to be drawn.

By moving the roller backward under the thumb any desired amount of blood may be drawn into the pipette, and by dipping the pipette into either the salt or the acid solution, as the case may be, the blood is easily and quickly diluted and ready for examination.

The ease and surety with which one can use this attachment and cause but the minimum annoyance to the patient is truly remarkable.

Infant Feeding.—J. J. Thomas, Cleveland, states in the *Archives of Pediatrics* that the estimation of the food requirement of the infant and the caloric value of infant foods is of the highest importance, not only for the purpose of establishing infant feeding on a scientific basis, but also to guard against that most frequent source of dyspepsia with all its dire consequences—overfeeding.

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SATURDAY, JUNE 22, 1907.

PREPARE FOR THE FOURTH OF JULY.

It is again time to sound the alarm and to prepare for the annual tetanus epidemic. We approach the celebration with somewhat less apprehension this year than we did a few years ago, for there is now every reason to believe that few of the many deaths that will follow can be ascribed to anything but municipal and parental negligence. Physicians will do their part to keep the mortality figures at a minimum. For four years THE JOURNAL has compiled statistics and published comments on the injuries of the Fourth and their results, and for immediate and valuable results it has been a most profitable undertaking. The first year, 1903, yielded 466 deaths as our tribute to Independence Day, and of these 415 were due to tetanus. On the basis of these figures, a vigorous campaign was started and taken up enthusiastically by other medical journals and the daily papers, which resulted in a fall of the mortality of the following year to 183 deaths, 105 being from tetanus. This decrease, it was easy to demonstrate, was the result of two factors, one being a considerable decrease (30 per cent.) in the number of blank cartridge wounds; the other, and perhaps the more striking, was the improved prophylactic treatment of blank cartridge wounds, especially as regards the use of tetanus antitoxin. In 1905 the total deaths and the number of tetanus cases remained about the same: 182 deaths and 104 cases of tetanus; while last year a gratifying decrease in tetanus to 89 cases was recorded, the total number of deaths being 158. These 89 cases of preventable disease were shown by the reports we received to be almost entirely of patients who were not seen by physicians until lockjaw had already set in. The old story of lack of appreciation of the dangers of Fourth of July injuries by the family physician was seldom heard. And so, as we remarked before, we look with confidence to a continuance of the record of the past three years, and feel assured that the profession will do its part in making the price of our senseless "celebration" as small as possible.

There is little that we can add to the advice as to the prophylaxis of tetanus which we have printed in previous years.[1] Every lacerated wound received from Fourth of July explosives, no matter which variety, must be looked on as a wound that is very possibly infected with tetanus. The character of these wounds is such that their cleansing can only be properly accomplished, as a rule, under general anesthesia; and to render conditions unfavorable for the anaërobic tetanus bacillus they should be permitted to heal from the bottom. And especially it must be remembered that, in spite of even the best of surgical cleansing, tetanus still may result, and consequently only through the prophylactic injection of from 5 to 10 cubic centimeters of tetanus antitoxin can one be absolutely certain of preventing the disease. This is most particularly true of wounds which are not seen until one or more days old. As the usual incubation period of tetanus is from 5 to 15 days, there are few physicians too far removed from a supply of antitoxin to secure it in time to be of value. The positive efficacy of tetanus antitoxin as a prophylactic, as well as its harmlessness, have been repeatedly proved, but never better than by the results of its use after the last three celebrations. It may be well to emphasize the prophylactic treatment of wounds from cannon crackers and the various explosives other than blank cartridges. Our statistics show that so far the decrease in deaths from tetanus has been accomplished almost exclusively by the prevention of tetanus in blank cartridge wounds, while the number of cases of tetanus from the other explosives has remained almost constant. As a result, in 1906 the blank cartridge tetanus was but little more than tetanus from all other causes combined, whereas in 1903 it constituted seven-eighths of all the cases. Apparently this is because the tetanus danger of blank cartridge wounds has been so well emphasized that the danger in the other wounds has been overlooked.

Although it seems that some slight improvement in the curative treatment of tetanus is being made from year to year, yet the percentage of recoveries is still extremely small, and most of these are in patients whose incubation period was of considerable length. Under no form of treatment do patients with an incubation period of less than nine days often recover. Consequently there is no disease in which the ounce of prevention is worth so many pounds of cure. Such improvement in results as has so far been observed seems to be largely due to more vigorous use of antitoxin, especially by the intraspinal and intraneural routes.[2] The French also cover the wound with desiccated serum. We have also learned not to be afraid of large doses of antitoxin, as these seem to be of advantage. Control of the spasms by intraspinal injections of beta-eucain (Murphy) or of magnesium sulphate (Meltzer)[3] seems to be of distinct advantage in the treatment of tetanus, and of even more value than the use of cerebral sedatives. All these methods are comparatively new, and hence it is extremely desirable that every case of tetanus so treated should be reported, whether the results be satisfactory or not, for

1. See THE JOURNAL, June 18, 1904, p. 1621.

2. These methods are described by Rogers in THE JOURNAL, July 1, 1905, p. 12; also in the special article previously quoted.

3. THE JOURNAL, May 19, 1906, p. 1502; also Jour. Exp. Med., 1906, vol. viii, p. 692.

the experience of any individual with tetanus is necessarily so small that we must depend for our judgment of methods on the collected reports of many cases.

ANIMAL EXPERIMENTATION AND THERAPEUTICS.

There is excellent material for use in meeting antivivisection legislation in the report recently made to the Royal Commission on Vivisection by Prof. A. R. Cushny of University College, London, formerly of the University of Michigan.[1] We have been too accustomed perhaps, to lay emphasis on the importance of animal experimentation for surgical progress and efficiency, and for serum therapy, as well as for research that is directed simply toward the end of widening our knowledge. The antivivisectionists and many laymen, however, are prone to look on surgery as a bloody business and not entitled to consideration; serum therapy is for them a myth, and research in pure science but idle curiosity. A large proportion of them, however, are ready recipients of internal medicine, particularly advertised forms, and it may be of interest to them to learn how dependent nearly all our therapeutic resources are on animal experiments, while the laymen in legislative bodies may well be impressed by the evidence of Dr. Cushny's report, which considers the dependence of modern therapeutics on animal experimentation.

As a matter of fact, but a very few of the many advances that have been made in the last fifty years could possibly have been made but for animal experimentation, for outside of the antiseptics, purgatives and emetics, little has been discovered without their aid, and even in these cases studies on animals have been of enormous help. In the study of drugs acting on the heart, circulation and nervous system, animal experiments are absolutely essential. Not only have many new and valuable drugs been discovered, but serious errors in the use of well-known drugs have been corrected through the observation of their effect on animals. Thus digitalis was at one time recommended for aneurism because it slowed the heart, until it was shown by experiments on animals that it not only slowed the heart but raised the blood pressure. No soporific has been introduced in the last forty years except by means of animal experiment, nor could they well have been used in man until their dose had been ascertained by experiments on animals; some investigators have nearly lost their lives trying unknown drugs on themselves. Among the soporifics are to be found also some excellent instances of how experiments on animals which were directed to elucidate what appeared to be purely academic questions, the form of experimentation most decried by the antivivisectionists, have led to discoveries of the greatest practical worth. For example, the discovery of the action of chloral, with all the subsequent advances in the study of hypnotics, is the outcome of Liebreich's attempt to solve the purely technical question "whether a substance is broken up into its constituent parts before it is oxidized." Sulphonal was discovered through the studies of Baumann and Kast on the metabolism of organic sulphur compounds, a problem of no apparent practical importance, at least to the layman. Paraldehyd was likewise found to be a valuable hypnotic through similarly "impractical" experiments.

Local anesthesia, with all its blessings, is entirely the outcome of animal experiments, beginning with von Anrep's studies of the effects of cocain on animals, which led to his suggesting its use on man, a suggestion that was not taken up for many years. All the synthetic antipyretics owe their origin to the observation by Filehne that antipyrin reduces the temperature of animals with fever produced by experimental infection. The wonderful control of the agonizing pain of angina pectoris by amyl nitrite, which has eased the tortures of countless sufferers with this disease, is the outcome of Gamgee's studies on the effect of various drugs on blood pressure in animals. All the other vascular dilators were worked out by means of animal experiment, as also were the arterial constrictors which have such a widespread usefulness, for the effect of adrenalin was first observed in animal experiments conducted for purely scientific purposes without a thought of possible therapeutic results. And so on through all classes of drugs, our entire progress is found to have been largely obtained in the same way at the expense of laboratory animals, whether we consider the diuretics, the urinary antiseptics, the general anesthetics or the organ extracts. Furthermore, of no less importance is the fact that countless drugs of reputed efficacy have been found through animal experiment to be valueless and have been properly discarded for some substitute of proved worth. Add to these main facts the extent to which we are now able to standardize drugs, the active elements of which can not be quantitatively ascertained by any means but animal experiment, such as ergot, cannabis indica and adrenalin, and a most formidable array of facts may be obtained which can hardly fail to impress any legislator who is not a preordained antivivisectionist, especially when it is made clear that without these animal experiments every attempt to treat the sick would amount to nothing less than an experiment, a human vivisection which animal vivisection renders needless.

YELLOW FEVER IN CUBA.

The reappearance of yellow fever in Cuba after its apparent extinction a few months ago, without its introduction from outside, or, in fact, its occurrence in any of the seaports or larger towns, is an event of much interest and raises the question of how this disease can lie dormant for such considerable periods of time. So inconsistent does this phenomenon appear with the accepted method of transmission by the *Stegomyia calopus* that some doubting Thomases have been in-

1. An abstract of this report is published in the British Medical Journal, May 18, 1907, p. 1195.

clined to revert to that half-way house on the road to conversion, the "not the only way" doctrine. To understand clearly conditions in Cuba it is necessary to review briefly the application there of the theory of Finlay and Reed.

In 1901, under the Military Government of Intervention, sanitary measures directed especially against yellow fever (mosquito work, etc.) were carried on in only a few of the larger towns. There was no insular sanitary service, but Colonel Gorgas was Chief Sanitary Officer of Havana, and in the other cities the medical officer of the local military command acted as such for each town. This work, though lacking in uniformity and system, was conscientious and thorough and was effective. In spite of its incompleteness, the result of mosquito work in half a dozen cities was the prompt and entire disappearance of yellow fever from the whole island. That the work in Havana is as thorough now as then is shown by the fact that there has been no case of yellow fever in Havana since Christmas, and in the other cities likewise there has been no reappearance. Why, then, does not the disease disappear from the whole island as in 1901? What is the explanation of its reappearance in the small towns—at Nueva Paz on April 1, three months and twelve days after the last case; at Union de Reyes five months and three weeks after the last case; at San Nicolas, where no cases were reported last year, and in the district of Ranchuela, where the last recognized case occurred on December 15? It is undoubtedly due to the fact that, whereas in 1901 the inhabitants of the country and small towns were practically all immune, there has been in the past seven years a sufficient accumulation of non-immune material to support smoldering foci of infection.

The Spanish immigration has poured in a steady stream of non-immunes. Some of these, but not a great number, have returned to Spain. The importance of this element is shown by the fact that, of the 193 cases reported since Oct. 17, 1905, 175, or 90 per cent., have been Spaniards. Another source of non-immunes, and a larger and probably more dangerous element, because it is not usually recognized by Cuban physicians, is the Cuban child. The following table shows the number of each added to the population since Jan. 1, 1901:

Year.	Spanish Immigrants.		Births.
1901 Havana only	17,672	Cuba.	43,586
1902 Cuba	10,744	Cuba.	47,091
1903 Cuba	18,054	Cuba.	57,864
1904 Cuba	29,116	Cuba.	58,363
1905 Cuba	54,219	Cuba.	65,906
1906 Cuba	34,556	Cuba.	70,000
Total	164,361		342,810

Although native physicians, with some notable exceptions, do not accept entirely the dictum of Guiteras, that the Cuban child acquires its immunity only by an attack of yellow fever, the evidence in support of Guiteras' theory is, it would seem, overwhelming, although there are some troublesome unexplained facts to be mentioned on the other side. The Cuban child, when it goes to Key West and Tampa and falls into the hands of physicians not under the influence of preconceived ideas, is found to be susceptible. Children also die in Cuba with black vomit, and the disease is then called *fiebre de borràs*. The death rate of Cuban children from certain other febrile diseases rises in yellow-fever years. The U. S. Public Health and Marine-Hospital Service does not admit the Cuban child as an immune unless it has lived in Cuba ten years *prior to 1901*; therefore, Cuban children of 15 years can not now go through quarantine unless it is shown that they have had yellow fever. So instead of an almost wholly immune population, as was the case in 1901, at present probably one-fourth of it is non-immune. It is, in addition, scattered over so great an extent of territory that to keep in touch with the cases of fever in children and laborers of the towns, villages and plantations of Cuba and to abolish the ever-present mosquitoes is apparently impossible. With careful, conscientious work and a strong force of district inspectors, it should be possible probably to keep the cities clear of it, if this work is not left to the municipalities—as has been done heretofore. At present, sanitary matters in the cities and towns outside of Havana are in the hands of municipal boards of health who are under the local authorities, and the Sanitary Department of Havana has only a nominal control over them. In consequence the municipalities have failed to appropriate the necessary funds for sanitary work, and, except in cases in which the State has stepped in and aided with appropriations from the national treasury, sanitary conditions are of the worst. Municipal control of sanitation has proved an utter failure. The provision of the Platt Amendment to the Cuban Constitution, that the cities shall be kept in good sanitary condition, is admitted not to have been maintained in the cities and towns outside of Havana. The incomes from taxes of Cuban municipalities are so small that there is no prospect of this being done at any time in the near future.

Governor Magoon has decided, therefore, that the State shall assume control of the sanitary service in all towns in the same way that it has charge of public education in Cuba. This will greatly help conditions. The Cuban child is the important factor in transmitting the advisory commission which is revising the laws has gone further and recommended the establishment of a secretaryship of public health. It will place the sanitary department under ideal conditions of efficiency. Another, though less desirable, proposition is the consolidation of the sanitary department with that of public works, a scheme which will at least relieve the former from the political and injurious domination of the secretaryship of government, where it was placed by President Palma.

Whether as a result of this outbreak we must allow a longer expectation of life to the infected mosquito, or must give adherence to the doctrine of Guiteras, that the Cuban child is the important factor in transmitting the

infection, will, it is hoped, be determined. Possibly it may be found that there is, in fact, as suggested by Manson, a mild strain of yellow fever which is common in endemic territories which confers immunity with but slight mortality—the acclimatization fever of the older writers—and that the malignant type may be an occasional development therefrom, depending on causes as yet unknown.

THE ALCOHOL MANIFESTO.

A storm in a teacup recently was raised in England by the appearance in the London *Lancet* of an open letter favoring the use of alcohol. The manifesto was signed by sixteen British physicians, many of whom stand so high in the profession as to make the letter at once worthy of notice. A flood of letters immediately appeared in the lay and medical press of Great Britain discussing the sentiments expressed *pro* and *con*. A counter manifesto was issued,[1] signed by men equally eminent and among whom were Sir Frederick Treves and Sir James Barr. These men emphatically dissented from the opinions expressed in the original document. The inner history of this first document, according to our London correspondent, indicates that it was prepared by a man in no way connected with the medical profession. Further, it appears that the letter presented to the signers was materially different from that given the *Lancet* to publish, and a number of signers are said to have retracted their endorsement. It is noteworthy that when the manifesto appeared the British government was getting ready to introduce a new licensing bill which was worrying the liquor interests. For these reasons it seems a fair deduction that the physicians who signed it and the medical journal that published it were the unwitting dupes of the liquor interests. No sooner had the letter appeared than it was universally copied in the lay press and was also distributed in pamphlet form in numerous saloons throughout the British Isles. The manifesto proved such a splendid argument for the liquor interests on the other side of the Atlantic that it is now being used on this side. The National Wholesale Liquor Dealers' Association of America has made a photographic reproduction of the original manifesto and is scattering it broadcast, especially among physicians. We do not blame the liquor men for making use of this testimonial for their cause, although we feel sure that the eminent men who signed the document would feel chagrined if they knew to what base use it is being put. This further emphasizes the need of caution in making dogmatic assertions on questions that are still open.

1. THE JOURNAL, May 25, 1907, 1793. The other accounts published in THE JOURNAL have been as follows: April 20, page 1363; April 27, page 1444; May 11, page 1611, and June 15, page 2041.

Save the Babies.—Let us ascertain whether our population is sufficiently fecund by giving every new-born babe a fair opportunity for life. Whether "race suicide" will then have a national aspect, society will be better able to judge. Certain classes are indeed chargeable with a low birth rate but for the masses the more important problem is a diminishing infant mortality.—G. B. Mangold, M.D., in *Popular Science Monthly*.

Medical News

CALIFORNIA.

College Enters Suit.—The College of Physicians and Surgeons, San Francisco, has filed suit against Dr. Dudley Tait, seeking damages for alleged libel in the sum of $75,000. The basis of the suit is said to be a letter from Dr. Dudley Tait, published in THE JOURNAL, Sept. 1, 1906, page 697, in which it is claimed that reflections were made on the reputation of the college.

Hospital News.—The San Antonio Hospital Association has been incorporated at San Bernardino with a capital stock of $25,000.——An association has been formed by 15 trades unions of Alameda County to erect in Oakland a $140,000 hospital.——A cottage in Los Angeles has been opened as a Maternity Hospital by the Women's Alliance of the First Unitarian Church.——The new St. Elizabeth's Hospital, Red Bluff, is now open to receive patients. Two wards have been equipped and the entire building has been refitted and remodeled.

Vital Statistics for April.—In the report of the California State Board of Health for April there were noted 1,938 births, 2,694 deaths and 2,019 marriages, equivalent to an annual rate per 1,000 of 11.8 for births, 16.4 for deaths and 12.3 for marriages. There were 409 deaths from tuberculosis, or 15.2 per cent. of the total mortality; 394 deaths, or 14.6 per cent. of the total mortality, from diseases of the respiratory system, 312 of which were from pneumonia. Diseases of the circulatory system caused 349 deaths, and diseases of the nervous system 267 deaths, 82 of which were due to meningitis. Typhoid fever led epidemic diseases with a mortality of 34; whooping cough, with 27; diphtheria, with 25; measles, with 19; influenza, with 18, and all other epidemic disease, with 16 deaths. The board dwelt strongly on the danger of the spread of typhoid fever by the use of uncooked fruit and vegetables, and devoted considerable space to the discussion of the benefits of sleeping out of doors.

GEORGIA.

Honor Physician.—The state of Georgia is said to have fixed on Dr. Crawford W. Long, for his pioneer work in anesthesia, as one of the two representatives of that state whose statues are to be placed in the Statuary Hall of the capitol at Washington.

Personal.—Dr. T. F. Brewster, superintendent of the Grady Hospital, Atlanta, for 14 years, will retire as soon as his successor can be named by the trustees.——Dr. J. L. Kennedy, Manassas, was seriously wounded in an attempt to capture a negro criminal, May 20.——Dr. Joseph E. Allen has been elected dean of the Medical College of Georgia, Augusta, vice Dr. Sansur Ford, deceased.——Dr. James H. McDuffie, Columbus, has been appointed a member of the State Board of Health, vice Dr. W. W. Stewart, Columbus, resigned.——Dr. Charles E. Murphy, Atlanta, has been given a verdict for $900 damages against the city, for injuries received three years ago, due to an imperfect pavement.

ILLINOIS.

Do Not Want Names Mentioned.—At a meeting of the Streator Medical Society, June 5, a resolution was adopted requesting local newspapers to discontinue mentioning the names of physicians and surgeons attending cases of illness or accident.

Commencement.—At the annual commencement exercises of the College of Physicians and Surgeons, June 4, a class of 165 was graduated. The degrees were conferred by President Edmund J. James of the University of Illinois, after which Rev. Rufus A. White delivered the doctorate address.

Smallpox in Peoria.—Dr. Albert Weil, the new health commissioner of Peoria, reports that there are 20 cases of smallpox in the Isolation Hospital and recommends the vaccination of all non-immune school children. In accordance with this recommendation more than 500 pupils of the public schools have been vaccinated.

Personal.—Dr. Charles Best, Freeport, has returned from Europe.——Dr. Otis Baldwin has been appointed city physician of Springfield, and Dr. John W. D. Mayes, Illiopolis, physician of Sangamon County.——Dr. William A. Haskell, Alton, has returned after several months in the Bermudas.——Dr. Charles E. Martin, Seward, is suffering from acute mental disease and has been placed in the Ransom Sanitarium, Rockford.——Dr. David M. Knapp, Mendon, sailed from New York on the *Pretoria*, June 8.

Coroner's Work for May.—During the month of May the coroner of Cook County investigated 384 deaths, the largest number of cases ever on record. Of these 55 were due to suicide, 12 of whom ended their lives by asphyxiation, 2 by throat cutting, 2 by drowning, 6 by strangulation, 5 by shooting and 17 by poison, in 10 of which phenol was used. Among other violent deaths 3 were due to automobile accidents, 6 to illegal operations, 3 to elevated railway accidents, 21 to railway accidents, 8 to asphyxiation, one to electrocution, 20 to homicide, one to hydrophobia, and one to accidental gunshot wound.

Prepare for State Meeting.—The profession of Peoria is already making plans for the Illinois State Medical Society meeting. Dr. Elmer M. Eckard has been named as chairman of the committee on arrangements; Dr. Otho B. Will, chairman of the committee on hotels; Drs. Sumner M. Miller, George A. Zeller, and Harry M. Hayes, committee on entertainment of members; Drs. Milton S. Marcy and H. O. Kelly, committee on entertainment of ladies; Dr. Edward E. Barbour, committee on place of meeting; Dr. Aloysius J. Kanne, committee on finance; Dr. William R. Allison, committee on exhibits, and Dr. Frank B. Lucas, committee on printing.

Society Meeting.—The Monroe County Medical Society held its annual meeting at Waterloo, June 3. Of the 18 physicians in the county 16 are said to be members of the society. The following officers were elected: President, Dr. Henry Heidelberg, Hecker; vice-president, Dr. Stephen Kohlenbach, Columbia; secretary, Dr. Louis A. Adelsberger, Waterloo; treasurer, Dr. Jacob C. Fults, Waterloo; censors, Drs. John P. Miller, Chalfin Bridge, and J. S. Sennott, Waterloo; delegate to state medical society, Dr. John S. Sennott, Waterloo, and alternate, Dr. Jacob C. Fults, Waterloo. A resolution was adopted whereby the society agreed to notify the State Board of Health of all violations of the malpractice act, in order that prosecution against the offenders might be instituted.

Chicago.

Personal.—Dr. and Mrs. Arthur D. Bevan sailed for Europe June 19.——Dr. and Mrs. Frank Allport sailed for Europe June 11.

Refuse Osteopath's Certificate.—The officers of the department of health on June 12 refused to approve a burial permit signed by a so-called "doctor of osteopathy." The department stated that no power of issuing death certificates has been granted to osteopaths and that such cases must be referred to the coroner before burial permits can be issued.

Society Meeting.—At the twenty-fifth annual meeting of the alumni of the College of Physicians and Surgeons, held June 4, Dr. A. Ralph Johnstone was elected president; Dr. John Weatherson, vice-president, and Dr. Twing B. Wiggin, treasurer. The health commissioner, Dr. William A. Evans, in his address, made a strong plea for more thorough organization of physicians.

Work of the Ambulances.—The twelve ambulances of the department of health made a total of 260 runs during the week ended June 15, removing 131 sick or injured to the hospitals, and 17 to their homes. Of those removed to the hospitals 30 were suffering from communicable diseases. The ambulance surgeons also treated 65 sick or injured persons at the police station and three at the places where the accidents occurred.

Mortality.—During the week ended June 15, 571 deaths were reported, three less than for the preceding week and 135 more than for the corresponding week of 1906, the annual death rate per 1,000 being 14.13. Pneumonia again assumed the lead in death causes with 86 deaths, followed by consumption with 63; Bright's disease with 51; heart, diseases, 43; acute intestinal diseases, 39; violence (including suicide), with 36, and cancer with 28. Diphtheria caused 14 deaths; measles, 10; scarlet fever and whooping-cough, each 7, and typhoid fever, 2.

Hospital Notes.—The new Michael Reese Hospital, recently erected at a cost of more than $700,000, was formally dedicated and opened for the care of patients June 16. Leon Mandel, chairman of the construction committee, made the address of presentation, and Edward G. Foreman accepted on behalf of the board of trustees. The new hospital will accommodate 300 patients and 100 nurses. It is six stories in height, fireproof throughout, and is fitted with every modern equipment for the scientific treatment of the sick.——The contract will shortly be let for the Cribside Pavilion, to be erected in connection with the Children's Memorial Hospital. The building will be two stories in height and will cost $40,000.

IOWA.

Nostrum Distribution Forbidden.—The city council of Iowa Falls, at a special session, May 26, passed an ordinance forbidding the custom of distributing from house to house, or displaying in public places and in the streets, nostrums and literature referring to private diseases, or other subjects that may have a tendency to corrupt the minds of the young.

MARYLAND.

Personal.—Dr. Henry J. Hebb, Randallstown, has been seriously ill with heart disease.——Dr. Byron W. Walling has been elected mayor of Poolesville.

Baltimore.

Gifts to Phipps Dispensary.—Mr. H. Phipps, Pittsburg, has sent $250 for the purchase of books for the Phipps Dispensary of Johns Hopkins Hospital, and also $1,000 to be used "as may be most useful to the dispensary."

Gift to Hospital.—Mr. Jacob Epstein, who recently gave $25,000 for the foundation of a Jewish hospital for consumptives, has increased his gift to $35,000. A site is being considered near Baltimore. A small building is to be erected to accommodate at first about 25 patients. The institution will be maintained by an endowment fund of $12,000, contributed annually by twenty-four citizens.

Centennial at University.—In the report of the Centennial of the University of Maryland, in the issue of THE JOURNAL June 8, Dr. Eugene F. Cordell, Richard F. Simpson and B. Merrill Hopkinson were noted as having received the degree of M.D. The degree conferred on those gentlemen was that of Master of Arts. John P. Poe, LL.D., was toastmaster at the banquet, not Dr. G. Lane Taneyhill, as stated.

Class Reunion.—The medical class of 1890 of the University of Maryland held its annual reunion May 30. Dr. Alexander D. McConachie acted as toastmaster at the banquet. The following officers were elected: President, Dr. Alexander D. McConachie, Baltimore; vice-president, Dr. Joseph E. Gichner, Baltimore; secretary-treasurer, Dr. Charles F. Nolen, Baltimore, and executive committee, Drs. J. William P. France, Baltimore; Henry F. Cassidy, Roland Park, and St. Clair Spruill.

Personal.—Dr. N. Moreland Owensby, of Bayview Asylum, has returned from Europe.——Dr. C. F. Farris has moved to San Francisco.——Dr. Philip Kingsworth Gilman has started for Manila, where he has accepted the assistant professorship of pathology in the new medical college.——Drs. W. F. Schwartz, Oscar E. King, Thomas H. Philips, A. W. Van Kirk, E. A. Corbin, John W. Wiseman, Herbert Schoenrich, John A. Smith and Walter V. S. Levy have been elected assistant resident physicians at the Bayview Asylum. Dr. Richard H. Follis has been elected visiting surgeon to the institution.——Drs. Frederick Taylor and John B. Thomas sailed for Europe June 8. ——Dr. William Simon sailed for Europe June 10.——The election of Dr. Marshall Price as successor to Dr. John S. Fulton, as secretary of the State Board of Health, was confirmed June 12. Dr. Caleb W. G. Rohrer was elected medical assistant.——Dr. Eben C. Hill will spend the summer as resident physician of a camp on Mallet's Bay, Lake Champlain.

Commencements.—The College of Physicians and Surgeons graduated a class of 66 June 3. Dr. Charles F. Bevan, dean of the faculty, conferred the degrees. Dr. Spencer M. Free distributed the prizes, and the annual oration was by Hon. John Gill, M. C.——At the thirty-second annual commencement exercises of the Johns Hopkins University, held June 10, degrees were conferred on a class of 70 by President Ira R. Remsen of the university, and the doctorate address was delivered by the Hon. Wendell Phillips Stafford of Washington, D. C. The following changes in the corps of instructors were announced: Associate in physiology, Dr. John R. English Eyster; instructor in biology, R. P. Cowles, Ph.D.; instructor in gynecology, Dr. Elizabeth Hurdon; instructors in medicine, Drs. Joseph A. Chatard and John A. Luetscher; instructor in physiology, Dr. Donald M. Hooker; assistant in experimental psychology, Dr. N. Trigant Burrow; assistants in gynecology, Drs. Curtis F. Burnham and DeWitt B. Casler; assistant in medicine, Dr. Harry S. Greenbaum; assistant in neurology, Dr. Harry D. McCarty, and assistant in obstetrics, Dr. Harry J. Storrs.

MASSACHUSETTS.

Must Build Hospital.—The State Board of Health has served notice on the municipality of Fall River that it must take immediate steps to provide a suitable hospital for contagious diseases to replace the one recently destroyed by fire.

Tuberculosis Exhibit at Lawrence.—The Lawrence Medical Society has made arrangements to have the tuberculosis exhibit of the Society for the Relief and Control of Tuberculosis of Boston shown in the city from October 12 to 20. Popular free lectures will be given and the public will be invited to inspect the methods of prevention and cure of the disease.

Personal.—Dr. Arthur T. Cabot has been elected chairman, and Dr. Thomas F. Harrington, Boston, secretary, of the associated district committee of the Massachusetts Medical Society for the Prevention and Control of Tuberculosis.——Dr. and Mrs. James R. Fuller, Andover, have started on a six-months trip to Europe.——Dr. Luther O. Whitman, Barre, has recovered from appendicitis and resumed practice.——Dr. Francis A. Cregg, Lawrence, has been appointed instructor in clinical medicine at Jefferson Medical College, Philadelphia.——Dr. Robert H. McNair, Springfield, has returned after six months in the South.——Dr. Benjamin Hicks Metcalf, Winthrop, was seriously injured in an automobile accident at Sanbornville, N. H., June 16.——Dr. Nathan P. Thayer, resident physician at Long Island Hospital, Boston Harbor, has resigned, to take effect July 1.

MICHIGAN.

Graduation Exercises.—At the annual commencement exercises of Detroit College of Medicine, May 31, a class of 69 was graduated. Dr. Thomas A. McGraw delivered the doctorate address, and Dr. Sidney T. Miller, dean of the college, presented the diplomas. The alumni association of the college held the annual clinics in Detroit from May 22 to May 30. In addition to clinics by the local profession the following gave clinics: Drs. Fenton B. Turck, Chicago; Abraham Jacobi, New York City; Charles A. L. Reed, Cincinnati, and Hugh T. Patrick, Chicago. At the annual meeting of the alumni Dr. Augustus W. Ives, Detroit, was elected president, and Dr. John C. Dodds, Detroit, was re-elected secretary. Among the entertainments given for the alumni was a reception tendered by Dr. Charles G. Jennings, and a boat ride and supper, at which the members of the association were the guests of Dr. Henry O. Walker.

Personal.—Dr. and Mrs. Robert Burnett Bean, Ann Arbor, left for Manila, P. I., May 31, where Dr. Bean has been placed in charge of the department of anatomy in the new medical college.——Dr. James F. Breakey has been appointed health officer of Ann Arbor.——Dr. George B. Hammond, Royal Oaks, recently underwent operation at Harper Hospital Detroit, for tumor of the stomach.——Dr. Clark D. Brooks, house surgeon at Harper Hospital, Detroit, has resigned.——Dr. John H. Kellogg, Battle Creek, has returned from St. Petersburg.——Dr. Hugo Freund, instructor in internal medicine in the University of Michigan, Ann Arbor, has resigned, to take charge of the Jewish clinic and dispensary in Detroit.——Dr. Robert McGregor, Saginaw, sailed for Europe on the *Kaiserin Auguste Victoria*, June 13.——Dr. Noah E. Aronstam, Detroit, sailed for Europe, June 11.——Dr. O. C. Breitenbach, who, as health officer of Escanaba, has been carrying on a steady warfare toward eliminating those factors which have been instrumental in maintaining the high typhoid fever mortality in that city, has been reappointed health officer.

MINNESOTA.

Graduation Exercises.—The twenty-fourth annual commencement exercises of Hamline University, Medical Department, Minneapolis, were held June 6, when a class of 19 was graduated. The annual address was delivered by Rev. James S. Montgomery; the address to the graduates by Rev. J. A. Watson, and the degrees were conferred by President George H. Bridgman.

Hospital Notes.—The Henry Christian Memorial Hospital for Consumptives, Minneapolis, for which an unknown donor gave $50,000, will be erected in connection with the United Church Fairview Hospital, Minneapolis.——The State Hospital for Tuberculosis, for which $65,000 was appropriated by the recent legislature, is to be located at St. Peter.——The board of control has decided to erect a $10,000 hospital for contagious diseases in connection with the State Hospital at Fergus Falls.

State Board Meeting.—At the annual meeting of the State Board of Health Dr. Henry Hutchinson, St. Paul, was re-elected president of the board, and Dr. James B. McGaughey, Winona, vice-president. It was announced that the new state Pasteur Institute, for which the legislature made an annual appropriation of $5,000, will be opened in Minneapolis, August 1, in charge of the State Board of Health. It was decided to treat Minnesota patients free, while $100 will be charged for the course of treatment in the case of patients from other states.

Personal.—Dr. Saxe W. Mowers, assistant surgeon of the Northern Pacific Hospital, Brainerd, has been appointed chief surgeon to the Northern Pacific Hospital, Tacoma, Wash., and has been succeeded by Dr. Arthur W. Ide.——Dr. I. Daniel Webster, Mankato, has sailed for Europe.——Dr. Jeannette McLaren, St. Paul, has been appointed a member of the State Board of Examination and Registration of Nurses.——Dr. Frank F. Wesbrook, dean of the University of Minnesota College of Medicine and Surgery, Minneapolis, has been appointed chairman of the research committee of one hundred of the American Association for the Advancement of Science to consider the subject of a national board of health.

MISSISSIPPI.

Personal.—Dr. W. H. Frizell, Brookhaven, has been appointed health officer for Lincoln County.——Dr. Oscar N. Arrington, Brookhaven, has been appointed interne at the Charity Hospital, Vicksburg.——Dr. John F. Hunter, Jackson, for twelve years secretary of the State Board of Health, announces that he will retire from that position at the close of his present term of office and devote himself to private practice.——Dr. R. L. Robinson, Meridian, was severely injured recently in a collision between his buggy and an electric car.

Additions to Faculty.—The president of the faculty of the Mississippi Medical College, Meridian, has announced the following additions to the faculty: Dr. John R. Tackett, professor of general practice and theory of medicine; James McQ. Buchanan, professor of mental diseases; Dr. A. W. Pigford, demonstrator of anatomy; Dr. Charles P. Mosby, lecturer on ophthalmology, and Dr. T. Alexander Barber, chairman; Dr. Samuel H. Hairston, secretary; Dr. D. W. Bethea, treasurer, and Drs. Nathan L. Clark and William W. Hamilton, members of the executive committee.

Anti-Tuberculosis League.—The Mississippi Anti-Tuberculosis League held its first annual session in Meridian, May 8-9. The object of the league was stated to be the education of the people as regards the nature and spread of tuberculosis, so as to invoke their aid in stamping out the disease. This the president, Dr. S. B. Flint, said could be done by the following procedures:

First. By prevailing on the boards of supervisors, mayors, aldermen and councilmen to enact laws prohibiting any one from spitting on the streets or sidewalks. Let containers be placed convenient to the sidewalks to receive the sputa. This should be burned every day.

Second. It should be compulsory for every physician to report every suspicious case to the city or county health officer. These officers should be provided with the necessary apparatus to make the tests required for a positive diagnosis.

Third. Make it compulsory for every city and county health officer to keep a mortuary record of all deaths and causes of same.

Fourth. To bring such pressure to bear on the next legislature that they will enact laws necessary, and make appropriations to build sanatoriums to care for the indigent poor of our state.

The next meeting of the league will be held in Gulfport. The following officers were elected: President, Dr. Robert W. Shipp, Gulfport; secretary, Dr. R. W. Hall, Clinton, and treasurer, Dr. Daniel T. Price, Booneville. The four vice-presidents will be selected at a later date and the appointments announced by the president.

MISSOURI.

Senior Student Dies.—Joseph H. Magana, a Mexican, and a senior student at the St. Louis College of Physicians and Surgeons, died April 5, from appendicitis, for which an operation had been performed, aged 27.

Smallpox.—Several cases of smallpox of mild type are reported from Independence.——Kansas City is said to have 20 cases of smallpox.——The smallpox situation at Sedalia is said to have been greatly exaggerated, as only 10 cases are under supervision.

Banquet to Dr. Sander.—Dr. Enno Sander was tendered a banquet, May 21, by the members of the St. Louis College of Pharmacy, at which a life-size portrait of Dr. Sander was presented to the college. The occasion was also celebrated as the eighty-fifth birthday anniversary of Dr. Sander.

Commencement Exercises.—At the annual commencement exercises of the University Medical College, Kansas City, April 23, a class of 59 was graduated. Dr. James E. Logan conferred the diplomas and Rev. Daniel McGurk delivered the baccalaureate address.——Washington University Medical Department, St. Louis, graduated a class of 50, May 23. Chancellor Winfield Scott Chapin conferred the degrees and the doctorate address was delivered by Dr. Arthur D. Bevan, of Chicago, on "Medical Education."

Alumni Meetings.—The annual banquet of the Alumni Association of the Medical Department of Washington University, St. Louis, was held May 22. Dr. William S. Deutsch, the retiring president, acted as toastmaster.——The class of 1897 of the Missouri Medical College, now a part of Washington University, held a reunion in St. Louis, May 24 at which twenty members were present.——A reunion of the class of 1897 of the University Medical College, Kansas City, was held April 22. Dr. William T. Phy, Hot Lake, Ore., was elected life president of the association.

Hospital Notes.—The new charter of the St. Louis Children's Hospital was received May 26. The new training school will be established at once in connection with the hospital.——The new Kansas City General Hospital, which is now under construction, is expected to cost more than $320,000.——At the annual meeting of the St. Luke's Hospital Association, May 31, Dr. Harvey G. Mudd was elected a director.——John W. Estes, St. Louis, has been elected president of the new Charity Maternity Hospital, Dr. Davis Forster, secretary, and R. L. Emory, treasurer.——The board of control of the Levering Hospital, Hannibal, has made the following appointments for the year: Physician in charge, Dr. James N. Baskett; attending surgeon, Dr. Thomas Chowning; consulting staff, Drs. Charles E. Paxon, Henry L. Banks, Robert H. Goodier, Elmer E. Waldo and John J. Bourn; attending obstetrician, Dr. E. H. Bounds; consulting obstetricians, Drs. F. Janet Reid and John N. Primm; pathologist, Dr. W. Cloyd Gus; attending oculist and aurist, Dr. James S. Howell; consulting oculists and aurists, Drs. Edward T. Hornback and Ulysses S. Smith.

Personal.—Dr. C. D. Scott is appointed chief dispensary physician of St. Louis, vice Dr. Henry J. Scherck, and Dr. William B. Winn, assistant health commissioner, vice Charles W. Francis.——At the request of Circuit Attorney Sager, Dr. H. J. Scherck, chairman of the committee on legislation of the St. Louis Medical Society, has organized a commission on malpractice, consisting of Drs. Harry S. Crossen, Hugo Ehrenfest, Guthrie McConnell and Henry J. Scherck. The function of the committee is to report on cases of illicit practice or offenses against women.——Dr. Emmett S. Ballard has been appointed assistant city physician of St. Louis.——Dr. Hugh P. Lewis, Curryville, who has been ill for six months, has recovered and resumed practice.——Dr. William M. Bayliss has been elected superintendent of the State Sanatorium for Tuberculosis, Mount Vernon.——Dr. Morris C. Tuholske has been appointed assistant chief dispensary physician of St. Louis; Drs. Jacob J. Singer and Albert Beisbarth, dispensary physicians, and Drs. John F. Gallagher, Allen G. Wainright, T. R. Mulford and M. F. Khouri, vaccine physicians; Dr. Cleveland H. Shutt, assistant physician at the City Hospital, and Drs. Rodney J. Bunch, F. J. Sullivan and F. C. Esselbruegge, senior assistants; Dr. Martin J. Glaser, physician in charge of the Emergency Hospital, and Drs. Samuel T. Lipsitz and Marsh Pitzman, assistants; Dr. C. W. Barr, assistant physician of the Female Hospital, and Drs. Fred F. Zelle, Albert Boder and O. R. Engelmann, senior assistants, and Dr. G. R. Barber, assistant physician of the poor house, and Dr. R. A. Collins, assistant physician at the Insane Hospital.——Dr. Oscar H. Elbrecht, superintendent of the Female Hospital, St. Louis, was given a library suite by the internes, nurses and employés of the institution, May 21.

NEW JERSEY.

Change in Place of Meeting.—As the new hotel at Cape May will not be completed in time, the Medical Society of New Jersey has changed the place of its meeting to Long Branch. The meeting will be held in that city, at the Hotel Scarboro, June 25-27.

Personal.—Dr. W. P. Parker, Hornerstown, has been appointed second resident physician at the Mercer Hospital, Trenton.——Dr. Edgar B. Grier, Elizabeth, was seriously injured in an automobile accident May 24.——Dr. Henry H. Davis, Camden, has been appointed medical superintendent of the State Sanatorium for Tuberculous Diseases at Glen Gardner, which will be open for patients in August. The commission in charge of the sanatorium has elected Dr. William S. Jones, Camden, president, and Dr. Elmer Barwis, Trenton, vice-president.——Dr. Harry J. Harp, on the completion of his service as resident physician at the Paterson General Hospital, was presented with a handsome medical case by the nurses of the institution.——Dr. Edward LeRoy Minard, Rockaway Valley, has been appointed resident physician at the Mountainside Hospital.——Dr. J. J. Beckwith, Atlantic City, for several years surgeon of the field hospital on the beach, has been made police surgeon and the position has been made permanent.

NEW YORK.

New York City.

Hydrotherapy in Vanderbilt Clinic.—Plans have been filed for the partial remodeling of the Vanderbilt Clinic building of the College of Physicians and Surgeons for the establishment of a hydrotherapy department, which will be fully equipped with baths and a series of rain douches.

Changes in Faculty.—Dr. James D. Voorhees has been made adjunct professor of obstetrics in the Medical Department of Columbia University; Dr. Royal Whitman, adjunct professor of orthopedic surgery, and Drs. George R. Lockwood, William K. Draper and Van Horne Norrie have been appointed adjunct professors of clinical medicine.

Free Milk Stopped.—The supplying of milk and eggs as a special diet for consumptives by the board of health has been discontinued for lack of funds. During 1906 the health department furnished over 22,000 quarts of milk and 44,500 eggs in Manhattan alone. Altogether there were 50,000 quarts of milk and 96,000 eggs given away.

Personal.—The degree of LL.D. was conferred on Dr. Edward G. Janeway by Princeton University, June 12, and on Dr. Andrew H. Smith by Union College, June 12.——The degree of doctor of science was conferred on Dr. William Seaman Bainbridge by the Western University of Pennsylvania, June 7.——Dr. and Mrs. John G. Curtis sailed for Plymouth, June 13.

Gifts to Hospitals.—The will of the late Louis Josephthal bequeaths $5,000 to Mount Sinai Hospital to endow a bed in his memory, and $2,500 to the Montefiore Home for Chronic Invalids, for the endowment of a bed.——The late James Morris of Ridgefield, Conn., has bequeathed $18,000 to St. Luke's Hospital, the income of which is to be used in providing rides for sick children. Another bequest of $19,000 was also made to the same hospital, to be added to $6,000 already given in memory of the testator's son. The income from this is to provide for song services in the children's ward.

Reformation at Bellevue.—At the last meeting of the board of trustees of Bellevue and Allied Hospitals the following resolutions were adopted:

WHEREAS, The collection of fees by any member of the medical boards of Bellevue and the Allied hospitals for services rendered to actual or prospective patients of such hospitals is, in the opinion of the board of trustees thereof, improper and likely to lead to serious abuse and public scandal; therefore, be it

Resolved, That no member of the medical staffs of Bellevue and Allied hospitals shall either directly or indirectly be party to any charges made to actual or prospective patients of such hospitals.

This is the result of an investigation which revealed the fact that some members of the staff had accepted compensation for services. One member of the staff has resigned and several more resignations will probably be asked for.

Commencements.—The College of Physicians and Surgeons of Columbia University celebrated the one hundredth anniversary of its founding at the commencement, June 12. There were about 500 graduates, and addresses were made by Dr. William H. Welch of Baltimore, Dean S. W. Lambert, Rev. Dr. Aked and Dr. Darlington. The portraits of Dr. John G. Curtis, holder of the chair of physiology for many years, and of Dr. George W. Lefferts, emeritus professor of laryngology, were received. Wilbur Ward and H. W. Schulte received awards of fellowship valued at $500 each, and A. B. Wadsworth received the Alonzo Clark scholarship, valued at $600 a year.——At the commencement of Cornell University Medical College 72 graduates received degrees. Col. William C. Gorgas, U. S. Army, made the address of the day, telling of the work of the sanitary engineers in eradicating malaria and yellow fever in Havana and the Isthmus of Panama. It was announced that 89 per cent. of the graduates had received appointments to hospitals outside the college by competitive examination. Cary Eggleston received the first of the Metcalf Polk prizes, amounting to $300, and Robert E. Gaty was awarded the second.

NORTH CAROLINA.

State Board of Health Items.—At a recent meeting of the State Medical Society Drs. David T. Tayloe, Washington, and James A. Burroughs, Asheville, were appointed members of the State Board of Health.——At the annual session of the State Board of Health, held in Morehead City, Dr. Richard H. Lewis, Raleigh, was re-elected secretary-treasurer.

Personal.—Drs. James A. Burroughs and James Sawyer have been appointed members of the Asheville board of health.——Dr. Henry McKee Tucker has been elected physician to the State Agricultural and Mechanical College, Raleigh.——Dr. Albert Anderson, Wilson, has been elected medical director of

the Jefferson Standard Life Insurance Company, Raleigh, and will remove to that city.

PENNSYLVANIA.

Personal.—Dr. Jesse L. Lenker, Linglestown, has been elected resident physician at the Harrisburg Hospital.——Dr. Nathaniel Z. Dunkelberger, Kutztown, who has been seriously ill since March, and suffered a relapse May 23, is now reported to be improving.——Dr. William H. Knipe of Limerick Square was thrown from his carriage and sustained a fracture of the leg. ——Dr. Hamilton Graham has been elected president of the board of education of Kennett Square.

Typhoid in Pittsburg.—Typhoid fever prevails in Pittsburg to an alarming degree. On June 13, 27 cases were reported. Pittsburg is seldom, if ever, free from the disease, but its marked prevalence at this time causes concern to the health authorities. The infection is attributed to the polluted drinking water. It is said that several smaller towns beyond the city are infected with typhoid and the sewage of these places drains into the Allegheny River, from which Pittsburg derives its water supply.

Vaccination Sustained.—Governor Stuart vetoed the bill to amend the vaccination act, providing that certificates of successful vaccination or of having had smallpox shall not be required when smallpox is not known to exist in the said locality. He said that the words "known to exist" are indefinite. "In view of the fact that vaccination is a preventive measure, it would probably afford little protection to enforce the requirements relative to the said certificates only after smallpox is known to exist therein."

Philadelphia.

Jurisprudence Society Elects Officers.—The following officers to serve the ensuing year were elected at the meeting of the Medical Jurisprudence Society of Philadelphia, June 3: President, Dr. W. M. Late Coplin; vice-presidents, W. W. Smithers and Dr. A. Bern Hirsch; secretary, Dr. Henry Leffman, and treasurer, Pascal H. Coggins.

Personal.—Dr. James William White will sail for Europe July 1.——Dr. and Mrs. Charles E. deM. Sajous sailed for Europe June 15.——Dr. Abraham J. Cohen has been elected visiting physician to the tuberculosis wards of the Jewish Hospital. He succeeds Dr. Charles J. Hatfield, recently elected president of the Pennsylvania Society for the Prevention of Tuberculosis.——Dr. and Mrs. James A. Irwin sailed for Europe June 20.——Dr. W. W. Keen has had conferred on him the honorary degree of LL.D. by the University of Upsala, Sweden.——Dr. J. H. White, Public Health and Marine-Hospital Service, medical officer in the command of the New Orleans quarantine office, delivered an address before the American Society of Tropical Medicine in the Polyclinic Hospital, June 7, on "The Prophylaxis of Tropical Diseases."——Dr. Charles Fox, who is in Europe, will not return until the fall.——Dr. R. Tait McKenzie, physical instructor in the University of Pennsylvania, sailed for Europe, June 7.——Dr. Anita Newcomb Magee, Washington, D. C., was tendered a reception by the Society of Spanish War Nurses, June 7.——Dr. Henry B. Nightingale has been appointed surgeon on the staff of the Philadelphia Charity Hospital.——Dr. Albert Kocher of Berne, Switzerland, conducted a clinic in the Medico-Chirurgical Hospital, June 8.——Dr. F. W. White sailed for Europe, June 13.

GENERAL.

No Yellow Fever in Cuba.—During June no cases of yellow fever have been discovered in Cuba, and none remain of those already reported.

New Medical College at Manila.—Announcement is made that the new medical college of the University of Manila will be opened early in September. Especial attention will be paid, it is said, to tropical diseases. The Philippine government has appropriated $62,500 for the expenses of the first year of the institution.

Gastro-enterologists Meet.—At the tenth annual meeting of the American Gastro-enterological Association, held at Atlantic City, N. J., June 3 and 4, the following officers were elected: President, Dr. John P. Sawyer, Cleveland; vice-presidents, Dr. John A. Lichty, Pittsburg, and Dr. George D. Kahlo, Indianapolis, and secretary and treasurer, Dr. Charles D. Aaron, Detroit.

Tuberculosis in Cuba.—Minister Morgan reports that $60,000 has been appropriated for a free tuberculosis sanatorium for the poor of both sexes, to accommodate 50 persons, the number to be doubled when the capacity of the institution has been enlarged. The site is near Arroyo Arenas, 12 miles from Havana. In Havana there already exists a "League Against Tuberculosis" which has done good work, the president of which is *ex officio* a member of the superior board of health.

Southern Railway Surgeons Meet.—The Association of Surgeons of the Southern Railway held its twelfth annual session in Washington May 28 to 30. The following officers were elected: President, Dr. Hanson T. A. Lemon, Washington; vice-presidents, Drs. Charles H. Starkel, Belleville, Ill., and T. H. Happel; historian, Dr. George Ross, Richmond, Va., and secretary-treasurer, Dr. Jacob U. Ray, Jr., Woodstock, Ala. Birmingham was selected as the place of meeting for 1908.

Virginia Tri-State Meeting.—The Tri-State Medical Association of Virginia and the Carolinas held its annual session at the Jamestown Exposition June 3 and 4 and elected the following officers: President, Dr. Stuart McGuire, Richmond, Va.; vice-presidents, Drs. Southgate Leigh, Norfolk, Va.; Edward C. Register, Charlotte, N. C., and Charles M. Rees, Charleston, S. C., and secretary, Dr. J. Howell, Way, Waynesville, N. C. Charlotte, N. C., was selected as the place for the next meeting in February, 1908.

Confederate Officers.—At the annual meeting of the Association of Medical Officers of the Army and Navy of the Confederacy, held at Richmond, Va., recently, the following officers were elected: President, Dr. Samuel E. Lewis, Washington, D. C.; vice-presidents, Drs. E. A. Flewellen, Georgia, Claire Burwell, Virginia, and Isham G. Wilson, Demopolis, Ala.; secretary, Dr. A. A. Ryan, Nashville, Tenn. A resolution was adopted, thanking Major General F. C. Ainsworth, U. S. Army, for his efforts to prepare a complete roster of the medical officers of the Confederate army, together with their orders of assignment and dates.

Graduating Exercises of Army Medical School.—The graduating exercises of the Army Medical School took place in the lecture hall of that institution, May 31, in the presence of the faculty and the Assistant Secretary of War, who made a few appropriate remarks in delivering the diplomas to the graduates. Of the ten contract surgeons and one militia officer who took the course, nine reached the degree of efficiency entitling them to graduation. Contract Surgeon Frederick Stevens Macy won the Hoff memorial medal for the highest general excellence in class standing. The graduates then took their final examinations for admission to the medical department.

Teachers of Pediatrics Organize.—The Association of Medical Teachers of the Diseases of Children is a new society organized at Atlantic City, June 6. The aim of the organization is the advancement of the study of children and their diseases and the raising of the standard of the teaching of that department in medical colleges. The organization will also consider particular questions relative to hospitals and their management and the treatment of children at dispensaries and their homes. The following officers were elected: President, Dr. Samuel W. Kelley, Cleveland; vice-president, Dr. Charles Douglas, Detroit; secretary, Dr. John C. Cook, Chicago; treasurer, Dr. George H. Cattermole, Boulder, Colo., and censors, Drs. William C. Hollopeter, Philadelphia, Harry M. McClanahan, Omaha, and Richard B. Gilbert, Louisville.

CANADA.

New Site.—McGill University has secured a site for the new medical building directly opposite the Royal Victoria Hospital, the land having been donated by Lord Strathcona.

Hospital News.—No work will be done this season on the new Toronto General Hospital. The work of securing the site from the different owners is progressing favorably.——The local council of women in Winnipeg will endeavor to secure a children's hospital for that city.——Brandon, Man., will enlarge its general hospital at an expense of $5,000.——The capacity of the hospital at Rock Bay, B. C., is to be increased from ten to twenty beds, and Dr. MacDermott, formerly of the Vancouver General Hospital, will be in charge.——The trustees of the Manitoba Sanitarium for Consumptives have appointed a special committee to select a site for the new sanatorium.

Personal.—Dr. George W. Ross, who worked under Sir A. E. Wright, has been placed in charge of the inoculation department of the Toronto General Hospital.——Dr. H. R. Spence has been appointed house surgeon in the Hanot Hospital, Erie, Pa.——Dr. Alexander P. Reid, Middleton, medical health officer of Nova Scotia, has organized a public health association in that province.——Dr. John Stewart, Halifax, is recuperating in Scotland.——Dr. William A. DeWolf Smith, medical health

officer of New Westminster, B. C., has resigned.——Dr. O. R. Avison, some years ago a practitioner in Toronto, but for fifteen years missionary in Korea, has been given a decoration by the Emperor of China.——Dr. William Bayard, St. John, N. B., who is still practicing in that city at the age of 95 years, and who has been practicing over seventy years there, will be honored by his fellow practitioners of St. John on his birthday in August, with some suitable celebration.

FOREIGN.

Cerebrospinal Meningitis in Turkey.—It is reported that several isolated cases of cerebrospinal meningitis have occurred in Constantinople. Precautions have been taken to prevent dissemination of the disease.

Bamberger Prize for Wiesel of Vienna.—The medical faculty of Vienna have awarded the triennial Bamberger prize to J. Wiesel for his important works on the affections of the arteries in the course of acute infections.

Hamburg Editor Fined for Publishing Extravagant Advertisement.—The Hamburg courts recently fined the editor of a local paper 50 marks, about $12.50, for publishing an advertisement praising in extravagant terms "coza powder," an alleged remedy for inebriety.

Double Fees on Sunday.—The French Congress of Practitioners declared its approval of the plan to charge double rates for professional calls made on Sunday. This plan has already been adopted in the Lyons district, the public having been notified to this effect by the local medical society.

Personal.—Dr. I. Boas, Berlin, the specialist in gastrointestinal diseases, has just been given the title of professor by the University of Berlin. This is a well-deserved recognition of his many years of scientific work. He is at present the editor of the *Archiv für Verdauungs-Krankheiten*, and has published many works on diseases of the stomach and intestines.

City Physician and Assistant at Dresden.—The city of Dresden advertised recently for a second assistant city physician, offering an annual salary of $750—$900, but no one applied for the post. The salary offered has now been raised to $1,000—$1,350. Special training in hygiene is required and private practice is not allowed. The first assistant receives $1,125—$1,500.

Poirier Leaves His Property to His Native Town.—Professor Poirier of Paris left a property of a little more than a quarter of a million. Half of this, with reversion of most of the rest, was bequeathed to his native town of Granville "for the benefit of the poor." The trustees are left free to apply the sum as they deem best, but an "Institute for Puériculture" is known to have been Poirier's ideal.

Prepared Sera Supplied by German Central Authorities.—Eight prepared sera are now supplied by the German Imperial Board of Health for diagnostic and medicolegal purposes: agglutinating and bactericidal cholera and typhoid sera, agglutinating paratyphoid serum and dysentery serum, and a precipitating serum for the biologic blood test. These sera are kept constantly on hand ready for official tests at any time.

Social Amenities Between Universities of Paris and London.—The University of London accepted the invitation of the University of Paris for a visit during the last week in May, and a party of 100 were fêted and given receptions and luncheons and banquets by the Paris University, the president of the republic and others. The party were also escorted to visit the various educational centers in Paris, the Pasteur Institute, etc.

Next Meeting of the Continental Anglo-American Society.—Once a year this association of English and American physicians practicing or residing on the continent gathers for a business meeting and luncheon. The meeting this year is to be held in connection with the annual meeting of the British Medical Association, August 1, at Exeter. Those wishing to attend the luncheon will confer with Dr. D. W. Samways, Knowle, Topsham, Devon.

Memorial to von Ziemssen Unveiled at Munich.—A large bronze bust of Hugo von Ziemssen was unveiled, May 25, with appropriate ceremonies. It stands in the grounds of the public hospital, on a marble pedestal, part of which is arranged to serve as a settee, while at each end of the pedestal water spouts from a lion's head. After the ceremonies the board of twelve physicians who publish the *Münchener med. Wochschr.* invited the guests at the ceremony to a banquet, as von Ziemssen was long a member of this board.

Honors for Maragliano.—June 22 is the twenty-fifth anniversary of Maragliano's assumption of the chair of clinical medicine at Genoa as successor to De Renzi. The occasion is to be celebrated by his pupils and friends with much ceremony. A souvenir volume is to be presented to him containing all the articles that have been published by him or under his direction, and an endowment fund for providing an annual prize for the best work on tuberculosis. Representatives of the king and cabinet take part in the proceedings, which will conclude with a banquet in the ducal palace.

Silver Jubilee of the Russian Surgical Association.—On the occasion of the celebration of the twenty-fifth anniversary of the founding of the Russian Pirogoff Surgical Association at St. Petersburg several honorary members were elected, including five Russians and ten in other lands. The list includes Senn, Roux, Lennander, Watson, Horsley, Quénu, Poncet, Rydigier, Roentgen and Trendelenburg. Telegrams of congratulations were received from Boston, Harvard, Paris and Berlin.

Memorial to Roussel at Paris.—Théophile Roussel was the Paris physician to whose efforts France owes much of its reputation for the care of child life. He died not long ago, and a monument to his memory was recently unveiled by the president of the republic. It stands at the intersection of the avenue de l'Observatoire and the rue Denfert-Rochereau, but the "Roussel law" is a still more enduring monument. It provides, among other things, for medical inspection of foundlings and other infant charges of the state.

Italian Antimalaria Crusade.—The malarial districts in Italy are placed in charge of prominent physicians who, with their assistants, direct the campaign against malaria. Baccelli is in charge of the Rome district, Golgi of the provinces of Cremona, Milan, Novara, Pavia and Padua, Rummo of the Naples district, De Renzi of the Caserta district, Gabbi of Messina, Zagari of the Sassari district and Cardarelli of the Campobasso district. All but four of the twelve physicians entrusted with the task are members of the national legislature. The present appointments are merely the continuation of the work of each during the last years.

Italian Campaign Against Tuberculosis.—The committee appointed at the last Italian antituberculosis conference decided at a recent meeting to petition the government to appoint a permanent consulting committee for matters relating to the protection of the public against tuberculosis. It is proposed that the permanent committee should advise with the public authorities, the hospitals, etc., and with legislative bodies in all questions regarding repression of tuberculosis. Baccelli, Gatti, Maragliano, Rampoldi and Montemartini are the members of the present committee, several of whom are senators. Baccelli was delegated to present the petition to the government.

Repression of Venereal Disease.—The fourth public meeting of the Berlin branch of this national society was held in the city hall building May 11. Bruhns delivered an address on "The So-called Syphilis of the Innocent" acquired by infection from husband or wife, by infection of children, and by transmission without sexual intercourse, commenting on each of these three modes of infection. He referred to infection of physicians and nurses in the exercise of their profession, to infection by eating and drinking utensils, by pipes, by workmen's tools, and the like, adding that infection in barber shops is much rarer than generally believed. To protect infants and wet nurses against syphilitic infection he urged state control of the examination of wet nurses. In conclusion, he urged that every one who had had the misfortune to acquire syphilis should refrain from marrying until four or five years at least after all symptoms have subsided.

The Agassiz Centennial.—The Swiss Society of Naturalists will hold its ninetieth annual meeting at Freiburg July 28-30. The last day the centennial of the birth of Louis Agassiz will be celebrated by a pilgrimage to his birthplace, in the vicinity. It is not generally known that the great scientist was a physician. He studied medicine at Zurich, Heidelberg and Munich, where he was graduated about 1830. He was professor of natural history at Neuchâtel until he came to this country in 1846, and two years later accepted the chair of zoology and geology at Harvard. His "Outlines of Comparative Physiology" is about the nearest to a medical work among the numerous scientific communications which he published after his graduation. His son, Alexander Agassiz, was appointed curator of the museum at Harvard after the death of his father in 1873. A few years before he had developed the two richest copper mines in the world, the Calumet and Hecla. The Agassiz Association, founded in 1879, to stimulate scientific interest, had, in 1904, 1,000 chapters all over the world, with 10,000 members.

Agitation for Reform in Medical Instruction in France.—As a result of the deliberations of the Congress of Practitioners, which was recently held at Paris and described on page 1611 of the THE JOURNAL for May 11, the professors and students of Paris have been holding joint meetings to discuss ways and means. Many of the reforms urged by the students have been shown to be the ardent wish of the professors, for which they have long been working, but they have hitherto found it impossible to influence the central authorities. A committee from the meetings afterward waited on the minister of public instruction and obtained an encouraging hearing. In commenting on the matter the *Presse Médicale* remarks that these meetings just held have revealed the modern medical student in a new light. Less amusing but more practical than the medical student of old, the modern student is anxious to learn and realizes the points in which the instruction he is receiving fails to supply what he needs. The discussion with the professors was marked with zeal, dignity and respect. It seems that the routine administration of the medical schools in France has not kept pace with the growth of science, but is still hampered by the red tape of the Napoleonic era.

LONDON LETTER.

(*From Our Regular Correspondent.*)

LONDON, June 8, 1907.

The Superior Physique of Jewish to English Poor Children.

At the receiving room of the London Hospital, situated in the crowded East End and in a largely Jewish district, the superior physique of the Jewish to the English poor children is remarkable. Yet overcrowding is more rife among the Jews than among the English poor. Every house in a poor Jewish quarter contains not merely one or two families, but often four or five. The families, as is characteristic of the race, are large and generally three, if not four, generations are represented in the same house. They are not particularly clean. Nevertheless, Jewish children are taller, weigh more and have better bones and teeth than gentile children of a corresponding or even better class. The same fact has been observed in the poor-district schools of the large manufacturing city of Leeds, where many statistics have been obtained. A lesson taught by these facts is that, in the rearing of children, food is the most important factor, more important than hygienic surroundings. The Jewish poor are notoriously better parents than the gentile. On the other hand, their hygienic conditions are worse than those of the corresponding gentile class. Ninety per cent. or more of the mothers suckle their children, compared with 10 to 20 per cent. among the gentiles. Further, very few Jewish mothers go out to work in factories. Lastly, Jewish children get much fat in various forms—oils, milk, oatmeal.

The Decline of Physic.

At the opening of an isolation hospital at Preston, Sir Frederick Treves made a remarkable pronouncement on the subject of physic. He believes that the time will come when hospitals for infectious diseases will be empty and not wanted. This is to be accomplished by hygiene. The fight is against millions of microbes, and the weapons are sanitary regulations, municipal government, the sanitary inspector and the health officer. The mystery of the ancient doctor, his long words and extraordinary prescriptions is passing away. The multitude of shelves of bottles which surrounded him also is passing away and being replaced by simple living, suitable diet and plenty of sun and fresh air. Sir Frederick looks forward to the time when people will leave off the extraordinary habit of taking medicine when they are sick and when it will be found as anomalous for persons to die of scarlet fever, typhoid, cholera or diphtheria as for a man to die of a wolf's bite in England.

The British Medical Association and the General Medical Council.

The General Medical Council is the body commissioned by the government for supervising medical education and maintaining discipline in the profession. It is a judicial body whose findings are final on all professional misdemeanors. The British Medical Association has decided to act as complainant in cases which may be brought before the Medical Council. As many members of the council are also members of the association, a curious situation has arisen. It would be anomalous for members of an association which is a party in a case to act also as judges. The legal advisers of the council have advised that the proper course to be taken by a member of the council who is also a member of the association is not merely to withdraw from the decision of a case in which the association is complainant, but to withdraw from membership of the association altogether. The president of the council, Dr. Macalister, has accordingly sent his resignation to the secretary of the association. Other resignations will no doubt follow.

New Departure in the Treatment of Consumption.

At the out-patient department of the Brompton Hospital, the largest hospital in London devoted to diseases of the chest, an important new departure has been made in dealing with outpatients suffering from consumption. Each one is asked to allow his condition to be reported to the health officer of his district. If he consents, active steps are taken by the health officer to improve his hygienic surroundings and to prevent the spread of the infection. Further, the health officer is asked to send to the hospital any members of the patient's family who appear to have been infected with consumption.

The Epidemic of Cerebrospinal Fever.

In Glasgow, up to March 31, 312 patients with epidemic cerebrospinal fever had been treated, with 230 deaths (a mortality of 73 per cent.). On May 31, 110 patients were under treatment.

Action by a Surgeon for the Recovery of His Fee.

Though actions for the recovery of fees by general practitioners are common enough, actions by consultants are exceedingly rare. The reason is obvious: The former, like a tradesman, allows his patients to run accounts which he presents periodically, and on which he makes bad debts, often as much as 25 per cent. The fees of the latter are generally arranged at the time of the consultation or operation, and paid there and then. Moreover, there is a feeling in the upper ranks of the profession that it is *infra dignitatem* to sue for fees. Indeed, one of the conditions attaching to membership of the Royal College of Physicians forbids suing for fees. No such condition is attached to the corresponding diploma of the Royal College of Surgeons, but the suing of a patient by one of its Fellows, such as occurred in the following case, is almost unprecedented: Mr. C. H. Fagge, the well-known aural surgeon, was summoned to Dulwich, a London suburb, by a physician who was attending a child with measles, who developed acute suppurative otitis and mastoiditis. Under ether Mr. Fagge trephined the mastoid process. The operation was necessary to save the patient's life and was successful. He arranged with the local physician to charge a fee of $250, the income of the father of the patient being $4,000. The father did not know the amount until after the operation. He demurred and tendered a fee of $125. Mr. Cheatle and Mr. Waggett, aural surgeons, gave evidence that the fee of $250 was a reasonable one under the circumstances. The defendant alleged as a reason for thinking the fee excessive that the operation occupied only 40 minutes. The judge made a point of the fact that the defendant produced no evidence to show that such operations were performed at a lower fee. The jury returned a verdict for the plaintiff.

Lead and Arsenic in Tartaric Acid, Citric Acid and Cream of Tartar.

As a result of representations that certain manufacturers and importers refused to give any guarantee of purity in respect of lead and arsenic in the tartaric acid which they sold, the government directed inquiries to be made on the subject of contamination of tartaric acid. The inquiry was extended to citric acid and potassium bitartrate, since all these substances are liable to contamination from similar causes and are largely employed in domestic articles of food and drink, as well as in medicine. The lead is derived from the lead linings of the pans in which the earlier stages of manufacture are performed. Arsenic is derived from the sulphuric acid used in the process. The amounts consumed in Great Britain are approximately as follows: Tartaric acid, home manufacture, 1,300 tons; imported, 1,800 tons; citric acid, home manufacture, 800 tons; imported, 200 tons; cream of tartar, 3,000 tons, practically all imported. Analyses of 50 selected samples showed no arsenic in the English ones, and in no case more lead than 0.002 per cent. In nearly half the foreign samples this figure was exceeded, the worst sample being tartaric acid from Germany containing 0.0062 per cent. of lead. The largest amount of arsenic was found in a sample of Spanish acid, which contained 0.0008 per cent. It is noteworthy that the specimens examined did not include any of the "commercial tartaric acid" which is sold.

Professor Sir James Dewar.

Professor Dewar, certainly one of the two most brilliant British chemists, Sir William Ramsay, of course, being the other, is the last of a distinguished series of workers in the

realm of the atom and the molecule. His greatest achievements were the liquefaction of oxygen and hydrogen and common air. It is said that his first pint of liquid air cost $5,000, most of which came out of his own pocket. The tale is told that the physicians of Belfast once invited him to a smoking concert, and, Scotsman though he be, he was vastly amused at the design on the program, which represented him leading a donkey into the linen city laden with bottles of liquid hydrogen.

Jewish Tribute to Medicine in London.

The Jewish society of professional men in London, known as the Maccabeans, whose custom it is to honor, from time to time, distinguished members, whether Jew or Gentile, recently gave a banquet in London to a number of prominent physicians and surgeons. Many of the most distinguished British medical men were present. Dr. Bertram Abrahams was chairman. In returning thanks for the toast, "The Medical Profession," and speaking of the debt the public owed to the profession, Dr. Abrahams remarked that the profession of medicine does not offer such prizes as are open to a popular jockey or a music hall artist, but at least the physician who does honest work is sure of a living. He lamented the fact that in England the members of the Jewish race seemed to prefer the destructive professions of the army and the law to that of medicine.

LONDON, May 31, 1907.

Vivisection in Great Britain.

The British home office has just published a report showing that 46,073 experiments on living animals were performed in the United Kingdom during 1906 under license. In the experiments, 1,198 in number, performed under the certificate exempting the experimenter from the obligation to kill the animal before it recovers from the influence of the anesthetic, the initial operations are performed under anesthetics from the influence of which the animals are allowed to recover. If the antiseptic precautions fail and suppuration occurs, the animal is required to be killed. In no case has a cutting operation more severe than a superficial venesection been allowed to be performed without anesthetics. The total number of experiments performed for the Imperial Cancer Research Fund during 1906 was 21,082, of which 20,795 were inoculations into mice. Nearly 6,000 experiments were made on behalf of public bodies; 2,114 experiments were performed for the Royal Commission on Tuberculosis; 4,739 experiments were made for the preparation of sera and 1,079 for the testing of drugs. There were 26 injections for the diagnosis of rabies in dogs. The total number of experiments was 8,138 more than in 1905.

Causes of Crime in Great Britain.

The annual report for 1906 of the Prison Commissioners for Scotland has been issued recently. The report states that the number of receptions into ordinary prisons in Scotland in 1906 was 60,115. Of these, 42,121 were males. The females numbered 17,994. The curious paradox is advanced that material prosperity tends to foster crime. Last year was a good one, and the commissioners' experience has been that such circumstances tend to produce an increase of crimes connected with drink. The evil of excessive drinking provides not only tens of thousands of prisoners for offenses, which may be grouped under the head of disorder, but the commissioners find that drink is closely allied with serious crime. The fact most to be deplored is the large number of persons who are every year reported as having appeared in prison for the first time. In Scotland they generally number about 13,000, and it is this steady supply of new prisoners which maintains the high population of the prisons.

Alcoholism and Depopulation.

In consequence of the proposal that children under 14 years of age should be prohibited by legislation from entering public houses, the consulting medical staff of the National Association for the Feeble-minded has gathered statistics bearing on the relation of alcoholism to degeneracy. The conclusions were as follows: 1. Parental intemperance is a large factor in the degeneracy of offspring, both mental and physical. 2. Parental intemperance (*per se*) is not so large a factor as has sometimes been assumed in the causation of consequential mental defect, but in combination with other terrible taints—tuberculous, neurotic and syphilitic—alcoholism is a prevalent, though not altogether predominant cause of idiocy, imbecility and feeble-mindedness. Parental intemperance is sometimes a consequence of a neurotic or insane heredity and must be taken into account in estimating the influence of the alcoholism.

Minister of Public Health Suggested for Great Britain.

Of late it has frequently been suggested that there should be a minister of health for Great Britain. The idea has found favor with the public and is not unlikely ere long to materialize. Of course, it is absurd to educate a child while neglecting his bodily needs. Undoubtedly the care of health is a matter of first importance, and the creation of a minister of health would be a forward step toward the successful attainment of this object.

The Navy and Army Nursing Association.

In this country women are almost exclusively employed as nurses, and their skill and training is probably unsurpassed by those of any other country. On the other hand, male nurses are seldom employed and male nursing is both inefficient and unorganized. Indeed, there is no hospital at which male nurses can be trained. A step has at last been taken to remedy this defect by the formation of the Navy and Army Male Nursing Association. Its primary object is to enable first-class orderlies to find employment in civil nursing on leaving the services and to provide a good nursing reserve for the country, as every member will pledge himself to serve again in time of war. The training which these orderlies have received in the navy and army is as good as it possibly can be and they will supply a great want.

VIENNA LETTER.

(*From Our Regular Correspondent.*)

VIENNA, June 3, 1907.

An Action Against the Dentist-Monks in Vienna.

Attention of the government has been called to the fact that unqualified dentistry is practiced in Vienna. For many years the "Barmherzige Brüder," an order of the Samaritans, has practiced dentistry in this city and the number of extractions done every year has been ever increasing until in 1906 the number reached 60,000, or nearly 200 daily. It is true the majority of the patients are of the hospital class, but many are well to do. The main reason, however, for the action is a protest from the Medical Council, stating that the extractions were generally done by absolutely unqualified monks, without the supervision of medical men; neither asepsis nor antisepsis were always adhered to, and, as a rule, no anesthetics were employed. The action of the Medical Council was seconded by the Union of Stomatologists, which in strong terms deprecated the abuse of the exceptional position of the monks. The general has ordered several brothers to enter the medical curriculum in order to comply with the requirements of the law in regard to dentistry, which compels the dentist to obtain the degree of M.D. before being permitted to practice.

Fighting Quacks and Proprietary Medicines in Austria.

A vigorous campaign is being conducted in Austria against unqualified practitioners and the nostrum business. The higher courts of justice have lately taken a decided position in this respect by stating that, for the conviction of a person charged with an offense of this kind, the fact that the patient had not suffered by the remedy recommended or the therapeutic measure employed by the defendant was of no importance. If such a person was not entitled to offer medical help, or, in other words, if he could not produce a diploma from a medical school, the law was brought to bear on him. Especially the so-called nature-healers, a species which lately has been very conspicuous by their advertisements, fall under the scope of the new view. A similarly strong stand is taken by the courts in regard to proprietary medicines, the composition of which must be disclosed to the board of health, and which must be admitted by this board. Acting on a suggestion by several medical corporations, the minister of the interior has issued several orders against the advertisements of so-called "cures," the best known and best advertised of which are cures for deafness, hernia and "female illness." The latter especially are simply announcements of a criminal nature, since they mean, under a slight disguise, nothing more than advertisements of criminal abortion. In order to suppress such advertising, newspapers have been forbidden to accept them. The description of "patent medicines" must be confined to their actual virtues, without duping the public by fraudulent testimonials and misquoted endorsements from the profession. The new parliament, which has been elected on an entirely new basis, will, no doubt, favor the movement against the people's enemies; a number of medical men have been elected, and these mostly of a radical turn of mind, so that energetic actions in this respect are justly to be expected.

Pharmacology

PRINCIPAL NEW REMEDIES FOR 1906.

Report of the Investigations Made at the Institute of Berlin University.

F. Zernik made a report to the German Pharmaceutical Society[1] at its meeting Feb. 7, 1907, on the principal new remedies for the last year. The investigations on which the report is based were made at the Institute of Berlin University under the auspices of the society. Thirty-six new preparations were investigated and of these 12 were thoroughly objectionable. In 12 others the statements of the literature were false, and only in one-third could the statements of the manufacturers or of the literature be confirmed. These figures show how necessary is a systematic and regular investigation of the new remedies.

In introducing the subject Zernik points out that the institute has entered into an arrangement with the Council on Pharmacy and Chemistry of the American Medical Association whereby the work of one becomes available to the other party. Commenting on the scope of the work done by the Council, Zernik recommends that in Germany pharmaceutical chemists and physicians cooperate in a similar manner. He further notes that the exposition of the defects or unreliability of new remedies can have little effect unless these results become known to the physicians. It will be of little service for the pharmacist to be informed that a proprietary remedy does not sustain the claims made for it if the physician, in ignorance of these exposures and trusting to literature of the manufacturer, continues to prescribe it.

AUTAN.

Autan is a preparation intended for use as a disinfectant. The process of preparing it is protected by patent and depends on the fact that all alkaline peroxids in the presence of water are capable of converting paraformaldehyd into formaldehyd. In place of an alkali peroxid a peracid salt may be used, for instance, sodium perborate. By the addition of an alkaline substance the development of formaldehyd is accelerated. The autan of commerce is a mixture of barium peroxid and paraformaldehyd. The application is very simple. The amount corresponding to the size of the room is put in an appropriate vessel and the prescribed quantity of water added. Gas is evolved immediately. After disinfection is completed a corresponding quantity of "ammonia-developer" supplied with the disinfectant is set into activity by moistening with water, the formaldehyd vapors present are converted into hexamethylenamin.

FESTOFORM.

Festoform is made by solidifying a solution of formaldehyd by the addition of soap. It dissolves in water, forming an opalescent neutral liquid which is applied to the disinfection of rooms with a specially constructed apparatus.

PHENYFORM.

The action of phenyform, which is recommended as a non-irritating, rapidly drying and non-toxic antiseptic for wounds, also depends essentially on the splitting off of formaldehyd. According to the German patent, it is produced by heating phenol with a solution of potassium hydroxid and formaldehyd. After the reaction is completed the mixture is acidified and the voluminous precipitate collected. It is an almost colorless, very light, odorless and tasteless powder, insoluble in water, ether and fixed oils, but soluble in alcohol, acetone and alkaline solutions. On warming with an alkali it develops formaldehyd. According to Zernik's investigations phenyform is a mixture of at least two condensation products of phenol and formaldehyd. The reaction with ferric chlorid shows that phenyform contains phenolic hydroxyl. The theoretically possible combination $OHC_6H_4.CH_2.C_6H_4.OH$ could not split off any formaldehyd on warming with an alkali. It is not chemically correct to designate it as polymerized oxybenzyl alcohol as has been done by Schuftan. Zernik found the remedy to be caustic, probably because of free phenolic hydroxyl.

IODOFAN.

Iodofan is the subject of many contradictory statements as to its composition and properties. It has been given the formula $C_6H_2I(OH)_2HCHO$ or $C_6H_2I(OH)_2HCHO.2H_2O$. The product obtained in the market is amorphous, brownish red, scarcely soluble in alcohol, ether or chloroform, insoluble in cold water. On warming with water or with alkali some iodin is split off which can be demonstrated in the filtrate together with a reducing substance. Formaldehyd can not be distilled from the extract obtained by shaking iodofan either with acid or with alkali. It contains 15 per cent. water, yields 0.26 per cent. ash and about 4 per cent. iodin. According to the formulas given it should contain from 42.04 or 47.75 per cent. iodin. It is evident that it does not possess the composition claimed.

ALFORMIN.

Alformin is recommended as a substitute for solution of aluminum acetate on the claim of greater permanence and greater astringent and disinfecting power. It is a mixture of free formic acid and aluminum formate having the formula $Al(HCOO)_2OH$. Zernik could not substantiate the claim to greater permanence and attributes the increased disinfecting power to free formic acid, which would also be more irritating.

TANNISOL is a preparation similar to tannoform produced by evaporating tannin with a solution of formaldehyd.

NOVOCAIN (See "New and Non-official Remedies," THE JOURNAL, Nov. 10, 1906), and ALYPIN (See "New and Non-official Remedies," THE JOURNAL, Feb. 2, 1907), are now offered in the form of nitrates so they can be mixed with silver nitrate.

BENZO-SALIN AND VESIPYRIN.

Benzo-salin and vesipyrin are new salicyl preparations isomeric with each other. Benzo-salin is the methylester of benzosalicylic acid $C_6H_4(COCH_3)(OCOC_6H_5)$ and vesipyrin is acetyl-phenyl-salicylate $C_6H_4(COOC_6H_5)(OCOCH_3)$. Benzosalicylic acid is a hitherto unknown compound and is produced by the action of benzoylchlorid and disodium salicylate. Benzosalin is a white powder insoluble in water, unaffected by the stomach, but decomposed into its constituents slowly in the intestine. Vesipyrin has similar properties.

SALIMENTHOL is a menthyl ester of salicylic acid decomposed in the intestine into its constituents.

ASPIROPHEN.

Another new salicyl preparation had been introduced into trade under the name ASPIROPHEN. While it is claimed to be a definite compound of acetyl acetic acid and phenocoll, investigation showed that it is not a chemical compound but rather a mixture in molecular proportions of free salicylic acid and monoacetyl phenocoll. In this connection it is noted that the claims of the manufacturers are based on the ground that it does not contain free salicylic acid.

CITROCOLL is a similar preparation; its real composition is not yet definitely determined, but it is certainly not what the manufacturers claim it to be, triphenyl citrate.

MIGROPHEN, SULPHOPYRIN and BETA-SULPHOPYRIN were found to be mixtures instead of definite chemical compounds.

IODIPIN (See "New and Non-official Remedies," THE JOURNAL, Oct. 27, 1906), has been improved by converting it into a solid form by emulsifying it with the albumin preparation roborat.

SAJODIN.

The calcium salt of mono-iodo-behenic acid has been put on the market under the name sajodin (See "New and Non-official Remedies," THE JOURNAL, Feb. 23, 1907), as a substitute for potassium iodid. Its composition should be $Ca(C_{22}H_{43}O_2I)_2$ and it should contain 26 per cent. of iodin. The samples of sajodin on the market have varied considerably in their iodin content. It is claimed that the preparation of a compound containing this per cent. of iodin presents some difficulties to the large manufacturer, but Emil Fischer on behalf of the manufacturers has promised that hereafter it shall contain as a minimum 24.5 per cent. of iodin reckoned on the dry material. The commercial preparation is somewhat hygro-

1. Berichte der deutschen pharmaceutischen Gesellschaft, 1907, p. 81.

scopic and contains from 1 to 2 per cent. of water. Zernik has devised a process whereby the iodin content of this and similar preparations can be conveniently determined.

ESTORAL is a mentholborate which is decomposed into its constituents by moisture, as when applied to mucous membranes. In this way it secures the application of menthol and boric acid to surfaces affected with catarrh. On wounded surfaces it produces some burning which can be obviated by mixing it with some milk sugar.

CORYFIN is said to be a menthyl ethylglycollate and is recommended as an external application for catarrh and headache.

BISMUTH BISALICYLATE and BISMUTH BITANNATE are new bismuth salts less basic than the official bismuth compounds, and half their salicylic or tannic acid is readily set free. Examination showed them to be not quite pure and not up to the standard set by the patent specifications.

For diabetics the DULCINOL CHOCOLATE is of interest. Dulcinol is mannite, the sweet principle of manna, made palatable by the addition of a little common salt.

OVAGOL is a combination of the biliary acids with albumin which is said to pass into the stomach without causing irritation but to be decomposed in the intestine and exert there its cholagogue action.

THEOPHORIN, theobromin-sodium formate, is introduced as a new diuretic. Its incompatibility with acids, even the carbonic acid of the air, is to be remembered.

Two new urinary disinfectants, BOROVERTIN and FORMUROL, have been introduced. The former is a combination of hexamethylenetetramin with boric acid, the latter with citric acid. Formurol has been found by Zernik to be a mixture.

NOVARGAN (See "New and Non-official Remedies," THE JOURNAL, Feb. 16, 1907), was introduced the year before last as a new silver preparation, but failed because of its irritating character and because of the ease with which its solutions decompose. The manufacturers have introduced two new compounds, one of which, NOVARGAN III, appears adapted to overcome the objections to the compound first introduced. The new compound gives a clear yellow 1 per cent. solution that can be warmed to 40 C. (104 F.) without decomposition.

Serious objections to introducing a new substance under the protected name already given to a preparation that is also on the market are noted by Zernik, chief of which is that the pharmacist may put up the old for the new, to the disappointment of both patient and physician.

OMOROL is an organic silver preparation, which is recommended for local application to the throat in diphtheria, etc.

SOPHOL is a silver preparation, claimed to be a combination of silver with formonucleinic acid, but it has not proven to be permanent or of constant composition.

MERGAL is said to be a mixture of two parts albumin tannate with one of mercuric cholate. The object of the preparation is to present mercury to the liver in a form related as nearly as possible to the constituents of the hepatic tissues in the hope that it will be more quickly excreted.

HYGIOPON is an iron preparation, said to be obtained by an electric process and to possess an electrolytic action. Nothing is known of the method of preparation.

ISN, which has been claimed to be a ferrous saccharate, was shown by Koch to be a mixture of ferric and ferrous citrate with sugar.

TRYPANROTH has been shown to be an effective agent against the trypanosoma, which it destroys while circulating in the blood, but is powerless to do this after the dye has been fixed in the tissues. It is believed that the dye stimulates the organism to the production of a temporary defense against trypanosomes.

Annual Pharmacopeia Meeting.

The seventh annual meeting of the trustees of the United States Pharmacopeial convention was held in St. Louis, May 2-3, 1907.

The committee on Albert E. Ebert portrait reported progress. The additions and corrections to the Pharmacopeia submitted by the committee on revision were approved. It was decided to hold a meeting at Columbus, Ohio. The annual report of the treasurer was referred to the auditing committee.

A committee was appointed to receive bids for the printing of the Spanish translation of the United States Pharmacopeia. A communication was received from C. S. N. Hallberg suggesting a systematic examination of perhaps 1,000,000 prescriptions in various parts of the country to ascertain the relation of articles prescribed to those now official. This was referred to the committee on revision, with a recommendation that the suggestion be carried out.

It was decided that the title page of the Pharmacopeia shall not bear the name of any individual connected with the production of the matter included therein, this rule, however not to exclude the names of persons or firms authorized by the board of trustees to act as agents for the sale of the book. A committee was appointed to prepare recommendations to be submitted for the consideration of the U. S. P. convention of 1910.

The officers of the board of trustees were re-elected for the ensuing year. The committees were reappointed with the exception of the vacancy on committees caused by the death of Albert E. Ebert, which was filled by Frederick W. Meissner, the recently elected member of the board. On the evening of the first day the members were tendered a banquet by prominent pharmacists and physicians of St. Louis.

Give Medicine for Physiologic Effect.

Dr. John B. Roberts, in the *St. Louis Medical Review*, thinks that one of the reasons why satisfactory results are not gotten from prescriptions written by physicians is that too small amounts of the drug are prescribed. "The physician must know what he is giving, and how much," he says, "and must have the courage to give enough. Much of the vaunted value of nostrums comes from the fact that the careless and ignorant practitioner unwittingly gives these medicines in larger doses in the form of the advertised remedy than he has been accustomed to give in prescriptions."

Correspondence

The Temperance Lunch.

HARTFORD, CONN., June 13, 1907.

To the Editor:—I have received several letters from persons who evidently were not present at the Atlantic City meeting, inquiring about the "temperance lunch." A general statement of this occasion will be a sufficient answer to all inquiries and will be of interest to others.

For some time past a marked sentiment was expressed to us that the American Medical Association should show more interest in the alcohol problem at its annual meeting. The American Association for the Study of Alcohol and Other Narcotics has for the past twelve years held its annual meetings at the same time and place as the American Medical Association, but has not attracted much attention. The feeling has been expressed widely that a general meeting should be held, in which all members of the American Medical Association might join and discuss some of the great problems.

Following the example of the British Medical Association, a "temperance lunch" was arranged at Atlantic City, at which the President and eight ex-presidents of the Association agreed to be present and speak, together with others.

This was an unmistakable indication of the popularity of the movement, and arrangements were made to accommodate forty or fifty persons. The occasion was postponed a day to accommodate the landlord of the hotel and some of the speakers. The time was so arranged as not to interfere with other exacting duties of the Association, and to the surprise of the managers 118 tickets were sold, the full limit of the room, and this did not include a dozen more, who were invited guests, and were crowded in.

Four of the speakers were present. Two of the others sent notes of regret explaining their absence, and one was prevented by illness from attending the meeting. Dr. H. O. Marcy, Boston, presided, and most felicitously announced the purpose and

object of the meeting, and introduced the speakers as appearing for the first time in the rôle of temperance orators. To this the speakers replied with anecdotes and jests which kept the audience in a roar of laughter. Dr. Marcy said that the time has come for the profession to show its interest in a topic which is so intimately associated with the practice of every physician. Most unfortunately, the subject of temperance has been left to laymen and quacks, and the profession has stood by indifferent. A little band of pioneer men has been working over thirty years on this line, and it seems now that the time has come when the American Medical Association should come to their rescue and show an interest in the subject. He hoped that this would be the beginning of yearly meetings in which the American Medical Association would take a decided stand, not as defenders of any one theory, but as scientific students encouraging more exact study of the causes and methods of prevention.

The President, Dr. Bryant, followed, expressing his intense interest in all phases of the subject and congratulated the persons present on their interest to encourage the scientific study, and, if possible, point out means of prevention, in the broad sense, by which we can be freed from the terrible evils which gather about it. As a surgeon he believes that there is greater possibility of success in treating total abstainers and greater triumphs to be achieved when we can have eliminated the alcoholic factor of degeneration in the history of our patients.

He was followed by Dr. Musser, who pointed out many fields of causes that lead directly to the use of spirits and drugs. Discovering and preventing these would open up a new field with the greatest possibilities of success. He expressed his hearty sympathy with this effort and hoped that each one would make a scientific study of the conditions which terminate in such disastrous use of spirits.

Dr. Frank Billings urged the necessity of taking up the alcoholic problem as a scientific one, in which the study of causes and means of prevention should be the central object and purpose. He believes that there are large fields of preventive medicine in this direction that are yet to be occupied, and this movement is in the right direction and receives his heartiest approval.

Dr. McCormack followed, showing what a change there has been in public sentiment concerning the alcohol problem. He finds physicians in every state intensely interested and anxious to know how to bring about a revolution of the present theories and efforts to prevent the evils.

Professor Hall called attention to the delusion of alcohol as a stimulant and the failure of modern scientific methods to confirm the theories of the past. He believes that laboratory work will revolutionize and change the subject of alcohol as at present understood.

Dr. Grosvenor considers the alcoholic problem one of the most important of the present time and peculiarly a medical topic which the physicians, of all others, should teach.

Dr. Crothers mentioned the various anti-alcohol congresses held in Europe and the one projected to occur in Stockholm in July, which the Swedish government has officially recognized.

The meeting closed with appeal from the chairman to join in a new effort to place the medical profession right on this great problem. An effort is now being made to have these speeches gathered in a pamphlet form, not only because of their historic interest, but as expressions of the prevailing sentiments of some of the leading men of the profession at the beginning of the century. While there is difference of opinion concerning many of the alcohol problems, there is remarkable unanimity that the great question should come into the hands of physicians and be studied entirely from its scientific side.

The American Association for the Study of Alcohol was organized in 1807, and has held meetings every year, studying all phases of the problem.

It is now evident that the profession as a whole is going to take up the subject, and from all sides there are unmistakable indications that this will be one of the great topics that will occupy the attention of the profession in the future. A similar meeting next year has already been projected, and as secretary, the work will come into my hands, and with the cooperation of all persons interested a most enthusiastic meeting may be expected.

T. D. CROTHERS, M.D.

Veronal Dermatitis.

PORTLAND, ORE., June 5, 1907.

To the Editor:—In THE JOURNAL, June 1, Dr. L. Duncan Bulkley reported a case of veronal dermatitis which substantiates the case reported by me in the issue of April 20. I will pass over his remarks on, and the moral he draws from, my apparent neglect of the antecedent history, with the statement that a careful history had been taken. It is a good point always to omit unnecessary detail in recording cases, assuming that the intelligent reader appreciates the value of negations. The brief things are read—the lengthy are laid aside for an idle hour which never comes. The essentials of my case were the dermopathic possibilities of veronal, which were reported with sufficient fulness so that even my dermatologic friend did not attempt to improve on the description except to call my "blotches" maculo-papules.

It is noteworthy that both his patient and mine were elderly men. Each suffered from vertigo, depression and mental haziness after taking the veronal. This points to the probability that veronal is not a wise drug to use in aged persons except perhaps in small dose. Indeed, this conclusion has been forced on me from its use in several senile patients in whom it caused staggering, vertigo and stupor for half a day after the hypnotic effects had worn off. In such patients I have found that trional is the preferable drug. It seems, therefore, that senility is one of the few contraindications against the use of veronal. This conclusion I regard as of very considerable importance in connection with a drug which is being so extensively used.

WILLIAM HOUSE.

Miscellany

TOILET PREPARATIONS.

Analyses of Ayer's Hair Vigor, Pond's Extract, Danderine, Herpicide and Others.

Examinations of various toilet articles by C. D. Howard, chemist for the New Hampshire State Board of Health (*New Hampshire Sanitary Bulletin*, April, 1907), yielded some interesting results. These articles partake partly of the nature of medicinal agents and when used purely for toilet purposes are still of interest to the physician on account of the poisonous, irritating or injurious ingredients entering into many of them.

The hair tonics and dandruff cures belong to the following classes: 1. Mixtures of sulphur and glycerin, with or without lead acetate—depending on whether the preparation is to act as a dye, as well as a tonic. 2. Dilute alcoholic solutions of essential oils and some counterirritant, with or without glycerin or borax. 3. A class combining the second class with the alkaloids of cinchona and, rarely, of nux vomica.

The following brands come under class 1: Hay's Hair Health (contains lead acetate), Parker's Hair Balsam (contains lead acetate), Hall's Vegetable Sicilian Hair Renewer, Ayer's Hair Vigor.

Under class 2: Coke's Dandruff Cure (30.4 per cent. alcohol, practically all of which was found to be methyl or wood alcohol), Zepp's Dandruff Cure, Corolla's Hair Tonic, Westphal's Auxiliator (containing more than 10 per cent. of wood alcohol), Seven Sutherland Sisters' Hair Grower, Mme Yale's Excelsior Hair Tonic, Danderine, Newbro's Herpicide ("contains 56.2 per cent. of alcohol, practically all of which was found to be methyl or wood alcohol"), Foso Bark.

Lotions, cosmetics, cold creams, etc., may be divided into two classes: 1. Preparations intended for the removal of some facial disfigurement, or for the bleaching of the complexion. 2. Substances designed as soothing applications for minor or temporary disorders of the skin. "While certain constituents of the second class, such as borax, benzoin, almond meal, etc., serve to some extent as bleachers, yet most of the

'patent' preparations sold for this purpose and for the removal of tan, freckles and the like, contain such drastic and objectionable substances as salts of mercury, lead and zinc." The examination of these substances reveals the fact that many which are advertised as "perfectly harmless" contain poisons which might result in serious accidents if used in an improper manner and which might be absorbed from the skin so as to produce injurious effects or even fatal poisoning. Doubtless this form of misbranding can be brought under the control of the present law, but it seems as if the obligation to put the ingredients on the label ought to be extended to include the dangerous poisons as well as narcotic drugs.

Among the lotions examined, Mrs. McCorrison's Famous Diamond Lotion and Soule's Eradicator contain corrosive sublimate, Champlin's Liquid Pearl contains lead carbonate, and Dr. T. Gelix Gouraud's Oriental Cream or Magical Beautifier contains calomel. "The 'Magical Beautifier' was found to consist of approximately one-half ounce of calomel suspended in a short half-pint of water—a liberal valuation would be about five cents." The price at which the preparation is intended to sell is $1.50. Hind's Honey and Almond Cream contains no honey, so that the use of the word in the name is illegal.

The use of the word water in the naming of Florida waters is somewhat misleading, as most of these preparations contain a considerable but varying percentage of alcohol, which is necessary to dissolve the essential oils which form the active constituents. Florida water prepared by Diaz & Co. contains 13 per cent. of alcohol—all methyl or wood alcohol—and Violet Toilet Water, Dupont & Co., Paris, shows total alcohol, 67.60 per cent., of which 33.80 per cent. is wood alcohol.

The extracts of witch hazel examined show an absence of wood alcohol and formaldehyd, and contain ethyl alcohol in proportions varying from 7.8 per cent. to 14.95 per cent. The later quantity was found in the well-known brand, Pond's Extract. The residue on evaporation of this preparation was 0.01 per cent. Howard says: "Notwithstanding the extreme (and, it would appear, misleading) claims of the manufacturers, we are unable to find wherein this product differs (aside from alcoholic content) in any essential particular from other so-called 'extracts' of witch hazel." These preparations must be sharply distinguished from the official extract of witch hazel made by percolation and contain little if any medicinal agents except the alcohol.

Matis, advertised as a purely vegetable compound, contains 2.1 per cent. of saline matter, largely potassium iodid. Two preparations labeled honey and tar were found to contain no honey.

Sanitary and Moral Prophylaxis.—All sanitary efforts involve more or less of social and moral interests, and this is especially true of the three great plagues, tuberculosis, alcoholism and venereal diseases, which threaten the very life of civilized society. The organization of effort against the last of these evils, while originating with the medical profession, must of necessity enlist the aid of other classes and appeal to the public as a moral movement of greater scope than the mere prevention of disease. The magnitude of the problem confronting the Society of Sanitary and Moral Prophylaxis is partly shown by the statistics which its president, Prince A. Morrow, cited in his plea for such an organization, which was delivered before the Medical Society of the County of New York, May 23, 1904, and is now reprinted in the first volume of the Transactions of the society. This book shows that its members have not been idle in furthering the object of its existence, viz., the study of means for limiting the spread of diseases which have their origin in the social evil. The volume of 166 pages contains a list of 334 members of the society, composed largely of New York physicians, but including a fair number from other parts of the country and a considerable number of the laity, largely members of the clergy. The Transactions consist of addresses and papers read before the society from its first meeting, Feb. 8, 1905, to that of April 12, 1906. The society has early recognized that the chief means to be relied on for the suppression of these diseases is education, and the papers and discussions are chiefly concerned with the questions of what should be taught and how it can best be taught to those who need the knowledge. That knowledge alone will suffice to remove this evil is not to be supposed, but it must be admitted that it is likely to have a great deterring force. The discussions, however, indicate clearly that the success of the movement depends not merely on the impartation of physiologic knowledge or instruction in regard to disease. It necessitates the inculcation of higher ethical standards in regard to sexual matters and the uprooting of misconceptions which have taken possession of the lay mind, and to some extent have affected the judgment of the physician. In pursuance of its plan of education the society has published a pamphlet written by one of its members and entitled "The Young Man's Problem." While starting with the discussion from a purely physical and hygienic standpoint, this pamphlet leads at last to the moral aspect of the question and suggests that the education of the young man should be such as to lead him to a high ideal and to such respect for women that he will refrain from illicit intercourse on moral grounds. While the pamphlet will appeal strongly to the educated young man, its language appears to be too technical and its tone too philosophic to be understood by, and to make an impression on, the men who are most liable to fall victims to the venereal peril. For, while it is not proper to minimize the danger to the educated young man and it must be admitted that even the religious man may succumb to temptation, it is nevertheless true that the student or the young man who has received good moral training is already safeguarded to a certain extent by the very remedies which the society purposes to apply. Two other educational pamphlets have been put out by the society, one for teachers and one on the relation of these diseases to marriage. The importance of the issues which engage the attention of this society is its strongest claim to the support and cooperation of the medical profession as well as to that of other classes of the community.

Religious Body Aids in the Campaign for Venereal Prophylaxis.—An encouraging step has been taken by the Diocese of Massachusetts of the Protestant Episcopal Church in appointing a committee to inquire into the prevalence of immorality and its results and to recommend some action by that church in the matter. The appointment of this committee was largely due to the statements made in publications of the American Society of Sanitary and Moral Prophylaxis and in discussions before the American Medical Association and other bodies.

The committee reports that the statements made are correct and emphasize the responsibility of parents, teachers, physicians and the church. In order to awaken a deeper sense of responsibility among these different classes, they recommend that literature be prepared, not too technical nor diffuse, which should be widely disseminated either by societies of medical men for, or by such organizations as the New England Watch and Ward Society. They recommend efforts for the suppression of intemperance, for opposing the retardation of the age of marriage on account of too high a standard of living, the suppression of medical advertisements, improvement of industrial conditions which, by their oppressive burdens on poor girls, often increase the temptations to immorality, and lastly, they condemn sensational newspapers, which they declare Christians should not read, and, especially, should not advertise in.

The report is said to have stirred up a remarkable excitement throughout the state among the people as well as the clergy. The report of the committee concludes as follows:

"The church can not afford to be remiss in this every-day fight against the world, the flesh and the devil. Your committee respectfully urges that this convention should beg Christians everywhere to join in a more open, explicit and earnest battle against the forces of organized evil."

Frank's Technic for Cesarean Section.—As mentioned recently in these columns, page 1305, Frank performed Cesarean section in twelve cases, in thirteen of which the ordinary technic was contraindicated by suspicion or certainty as to the presence of infection. The results were excellent in every instance. He makes a small transverse incision above the symphysis, with the pelvis raised; opens the peritoneum and loosens the reflection of the peritoneum over the lower seg-

ment of the anterior aspect of the uterus. He seldom attempts to detach the peritoneum from the bladder, as this is liable to cause considerable hemorrhage, but incises the peritoneum again, beyond where it is firmly adherent to the bladder, leaving the adherent patch untouched. The lower lip of the lowest incision in the peritoneum is then drawn up and sutured to the upper lip of the first incision, thus suturing the peritoneum into a closed sac again, but out of the way above. The uterus is then opened with a transverse incision and the child delivered, the delivery being practicallly extraperitoneal. The loss of blood with this "suprasymphyseal delivery," as he calls it, was always surprisingly small, while he believes that it obviates danger of peritonitis and enlarges the sphere of the Cesarean operation.

A Lesson in Hygiene from the Turks.—The Turks never enter a mosque or residence or public building without removing the shoes they have worn in the street. The well-to-do wear an inner shoe, but the poor enter the building in their stocking feet or bare feet. They regard it as the greatest discourtesy to carry into a house or other building the filth clinging to the outer shoe, while it would be absolute desecration to take the filth into a sacred edifice. Remlinger (*Presse Médicale*), commends the practice. The extreme filthiness of their streets and the heavy oriental rugs indoors, which they wish to preserve from grit, have been important factors, of course, in the local adoption of the custom, but its advantages commend it for universal adoption. The women in Turkey do not sweep up the dust of the streets on their skirts, as is the custom with women in other lands. The trailing skirt is exclusively a product of occidental civilization.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

PENNSYLVANIA State Board of Medical Examiners, 708 Locust Street, Philadelphia, and in Pittsburg Academy, Ross and Diamond Streets, Pittsburg, June 25-28. Secretary, Dr. Winters D. Hamaker, Meadville.

PENNSYLVANIA Homeopathic Board of Medical Examiners, N. W. Corner 15th and Cherry Streets, Philadelphia, June 25-28. Secretary, Dr. C. S. Middleton, 1523 Girard avenue, Philadelphia.

PENNSYLVANIA Eclectic Board of Medical Examiners, Harrisburg, June 25-28. Secretary, Dr. W. H. Blake, 2116 N. Marvine Street, Philadelphia.

TEXAS State Board of Medical Examiners, Austin, June 25-27. Secretary, Dr. T. T. Jackson, San Antonio.

UTAH State Board of Medical Examiners, Salt Lake City, July 1. Secretary, Dr. R. W. Fisher, Salt Lake City.

ARIZONA Board of Medical Examiners, Phoenix, July 1-2. Secretary, Dr. Ancil Martin, Phoenix.

TEXAS Eclectic Board of Medical Examiners, Dallas, July 1-3. Secretary, Dr. L. S. Downs, Galveston.

WASHINGTON State Medical Examining Board, Seattle, July 2. Secretary, Dr. C. W. Sharples, Seattle.

COLORADO State Board of Medical Examiners, Denver, July 2. Secretary, Dr. S. D. Van Meter, 1723 Tremont St., Denver.

RHODE ISLAND State Board of Health, Room 313, State House, Providence, July 2-3. Secretary, Dr. Gardner T. Swarts, Providence.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, July 2-4. Secretary, Dr. H. M. Wheeler, Grand Forks.

CONNECTICUT Eclectic Medical Examining Board, State Capitol, Hartford, July 9. Secretary, Dr. Thomas S. Hodge, Torrington.

ARKANSAS Eclectic State Medical Board, Little Rock, July 9. Secretary, Dr. A. J. Widener, Little Rock.

ARKANSAS Homeopathic State Medical Board, Little Rock, July 9. Secretary, Dr. V. H. Hallman, Hot Springs.

ARKANSAS State Medical Board, State Capitol Building, Little Rock, July 9. Secretary, Dr. F. T. Murphy, Brinkley.

MAINE Board of Registration in Medicine, State House, Augusta, July 9-10. Secretary, Dr. William J. Maybury, Saco.

CONNECTICUT Homeopathic Medical Examining Board, Grace Hospital, New Haven, July 9-10. Secretary, Dr. Edwin C. M. Hall, New Haven.

VERMONT State Board of Medical Registration, Burlington, July 9-11. Secretary, Dr. W. Scott Nay, Underhill.

WISCONSIN State Board of Medical Examiners, Capitol Building, Madison, July 9-11. Secretary, Dr. J. V. Stevens, Jefferson.

MISSOURI State Board of Health, Mexico, July 9-11. Secretary, Dr. J. A. B. Adcock, Warrensburg.

OREGON State Board of Medical Examiners, Portland, July 9-11. Secretary, Dr. Byron E. Miller, "The Dekum," Portland.

WEST VIRGINIA State Board of Health, Charleston, July 9-11. Secretary, Dr. H. A. Barbee, Point Pleasant.

SOUTH DAKOTA State Board of Medical Examiners, Sioux Falls, July 10-11. Secretary, Dr. H. E. McNutt, Aberdeen.

California's New Practice Act.—The following is an abstract of the Practice Act, approved March 14, 1907:

Board.—The new Board of Medical Examiners of California will consist of eleven members appointed by the governor, five from a list of ten names furnished by the California State Medical Society, two members each from lists of four names each furnished by the State Homeopathic, Eclectic and Osteopathic Societies. Vacancies occurring will be filled from the other names on the list furnished. The term of appointment is for two years. Members are not to be in any manner connected with or interested financially in any medical college or school of osteopathy. No motion can be carried nor any rule or resolution adopted without having an affirmative vote of at least seven members. The secretary will not participate as an examiner in any examination held by the board.

Meetings.—Meetings may be held at such time and place as the board may designate. The legal residence of the board will be San Francisco.

Fees.—The registration fee is $25.00. When credentials are found to be insufficient or if applicant does not desire to take the examination, $15.00 will be returned.

Application and College Standard.—At least two weeks prior to the regular meeting of the board, applicants for license to practice medicine and surgery must file testimonials of good moral character, together with a diploma from a medical college, the requirement of which must be equal to that of the Association of American Medical Colleges at the time the diploma was granted; must prove that the diploma was received by him in the regular course of instruction and examination without fraud or misrepresentation, and must fill out an application blank containing such information regarding medical and preliminary education as the board may prescribe. Applicants for a certificate to practice osteopathy must file a diploma from a legally chartered school of osteopathy having a course of at least twenty months and after 1908 of three years of nine months each and including the studies examined on under the act. The examination is to be wholly or partly in writing, practical in character and to consist of ten questions on each of the following subjects: Anatomy, histology, gynecology, pathology, bacteriology, chemistry, including toxicology, physiology, obstetrics, general diagnosis and hygiene. Applicants must receive a general average of 75 and must not fall below 60 in any one branch. Five per cent. will be allowed for each ten years of reputable practice. In the examination applicants will be known by number only, the name to be kept secret until the board has finally voted on the application. Licenses must be recorded in the county where the holder is practicing. Practicing without first having a certificate so recorded is a misdemeanor, subject to a fine of $25 to $100 or imprisonment for thirty to sixty days, or both fine and imprisonment.

Refusal or Revocation of License.—After proof has been duly established, the board has the right to refuse a license for unprofessional conduct, which must have been within the two years next preceding his application. The board may also revoke a license for the same cause. Unprofessional conduct is defined to include procuring or aiding or abetting in procuring criminal abortion, wilful betraying of a professional secret, deceptive advertising of medical business, advertising of medicines or means regulating or re-establishing of the monthly periods of women, offenses involving moral turpitude, habitual intemperance and the impersonation of another licensed practitioner.

Exemptions.— This act does not apply to service in case of emergency or to the giving of family remedies nor to medical officers in the governmental services in the discharge of their official duties nor to dentists practicing dentistry, nor to a licensed physician of any other state while in actual consultation with a physician licensed in this state, nor to treatment by prayer, nor shall it be construed to discriminate against any particular school of medicine. All practicing under certificates issued under former laws are allowed to continue practice, but all certificates will be subject to revocation for unprofessional conduct as if issued under this act.

Practicing Without a License.—Any person who shall attempt to practice or advertise or hold himself out as practicing medicine, surgery, osteopathy or any other system of treating the sick or afflicted without having a valid unrevoked certificate will be guilty of a misdemeanor and subject to a fine of $100 to $500 or to imprisonment for 60 to 180 days, or to both fine and imprisonment. Impersonation of another practitioner constitutes a felony and is subject to the penalty so provided.

Utah's New Practice Act.—This Act, approved March 14, 1907, as abstracted, is as follows:

Board.—The Board of Medical Examiners of the State of Utah will consist of nine members appointed by the governor from licensed practitioners representing the various schools of medicine. This board will have the power to sue or be sued in its official name, to employ legal counsel and to conduct such business as is necessary in the performance of its duty. Any member of the board after trial may be removed by a two-thirds vote of the other members of the board.

Meetings.—The board will meet on the first Monday in January, April, July and October of each year in the state capitol.

Fees.—Examination fee, $15.00; reciprocity fee, $25.00.

Application and College Standard.—Applicant must show satisfactory evidence of having received a certificate from a first grade high school or an equivalent education. He must have received a diploma from a recognized medical college, which at the time of granting the diploma required at least the following hours of study: Anatomy, 420; histology, 90; physiology, 300; chemistry, 300; therapeutics, 90; bacteriology, 140; pathology, 240; physical diagnosis, 100; surgery, 540; obstetrics, 160, and gynecology, 160. Allowing a leeway of 10 per cent., the total minimum requirement is 2,286 hours. He must pass an examination, which must be wholly or partly in writing, in the above named subjects. License must be recorded in the county wherein holder resides.

Exemptions.—This act does not prohibit services in case of emergency, the administration of family remedies, nor to the medical officers of the government services in the performance of their official duties, nor to those healing by spiritual means without pretending to have a knowledge of medicine. Nor will this act apply to osteopaths now holding certificates from the Territorial or State Board of Medical Examiners. These, however, must within 60 days apply for a certificate entitling them to practice medicine and surgery.

Reciprocity.—Arrangement is made for reciprocity with states having standards at least as high as that of Utah.

Definition.—Any person shall be regarded as practicing medicine within the meaning of this act who shall diagnose, treat, operate on, prescribe or advise for, any physical ailment of another for a fee, or who shall hold himself out by means of signs, cards, advertisements, or otherwise, as a physician or surgeon.

Revocation of Licenses.—The board has the right to revoke or refuse a license for unprofessional conduct after due investigation has been made and proof established. Unprofessional conduct is defined to include criminal abortion, claiming to permanently cure manifestly incurable diseases, betraying of professional secrets, the making of grossly improbable statements in advertisements, the advertising of any medicine or means regulating or re-establishing the monthly periods of women, any offense involving moral turpitude, habitual intemperance, the excessive use of drugs or gross immorality. Non-graduate licentiates are not allowed to advertise as doctor, physician or surgeon, but as a "licensed non-graduate practitioner of medicine." Practicing without a license is a misdemeanor and one so practicing is liable to a fine of from $100 to $500 or imprisonment for 60 to 80 days, or both fine and imprisonment.

Colleges Adopt Higher Entrance Requirements.—The faculty of the College of Medicine of the State University of Iowa, at its session held May 31, 1907, voted to recommend to the board of regents that, beginning in September, 1910, the requirement for admission to the study of medicine be increased to two years of university work. The board of regents has already favorably acted on the one-year requirement, beginning September, 1909.——Cooper Medical College, San Francisco, by action of its faculty at a recent meeting, will require, after Jan. 1, 1910, that all students must have preliminary education equal to one year of work in a college of arts in addition to a four-year high school education, this additional year to include the subjects of physics, chemistry, biology and one language.

Corrections of State Board Statistics.—In THE JOURNAL, May 25, page 1764, line 21 was displaced; one of the two who failed in Alabama and who were charged against the Medical College of Georgia should be charged to the Atlanta School of Medicine. The totals, therefore, for the Atlanta School of Medicine, in tables A, D and G should read: Examined, 20; passed, 19; failed, 1; percentage of failures, 5.0. The one who failed in Alabama charged against the Medical College of Georgia on page 1768, line 21, should have been in line 22, for the Atlanta School of Medicine, while on page 1772 the one failing in Alabama, in line 22, should be obliterated.

Connecticut Will Have Higher Preliminary Requirements.—Dr. Charles A. Tuttle, secretary of the Medical Examining Board, sends us the following amendment to the Connecticut Practice Act, which has just been passed: "No person shall be eligible to said examination until he presents to the board satisfactory evidence that he has received a diploma from some legally incorporated and reputable medical college as determined by the provision of Section 4718 of the general statute, nor until he has presented to the board a certificate of good moral character signed by two reputable citizens of Connecticut, and also satisfactory evidence that before beginning the study of medicine he was graduated from a college, high school or preparatory school whose standing shall be approved by the board or that his preliminary education is equivalent thereto. From and after Jan. 1, 1912, no person shall be eligible to examination under this act until he shall in addition to the foregoing requirement present to the board satisfactory evidence that before beginning the study of medicine he has completed a course of at least nine months' duration which included physics, chemistry and general biology."

Marriages

HAROLD A. FISKE, M.D., to Miss Marie Shibley, both of Pasadena, Cal., June 1.

ANNIE R. COPELAN, M.D., and Mr. Abraham Erott, both of Baltimore, June 7.

ARTHUR J. ZIMLICK, M.D., to Miss Daisy Davisson, both of Philadelphia, June 5.

THOMAS EVANS CHANDLER, M.D., Boston, to Miss Lesly Hill of Lawrence, Kan., June 5.

WILLIAM EDWARD FOX, M.D., to Miss Lillian Whitcomb, both of Milwaukee, Wis., June 19.

WALTER H. FOX, M.D., Iowa City, Iowa, to Miss Bess Peebles of West Union, Iowa, June 12.

MARTUS CURTIS OLDHAM, M.D., to Miss Sadie Muir Combs, both of Lancaster, Va., June 5.

EBENEZER L. MCKINNIE, M.D., to Miss Helen Fiekes, both of Colorado Springs, Colo., June 19.

ALBERT J. DROLETT, M.D., Lansing, Mich., to Miss Grace Lundy of Detroit, Mich., June 1.

PLINY HAROLD HAYES, M.D., Buffalo, N. Y., to Miss Agnes A. Myer of Auburn, N. Y., June 18.

EDWARD E. WEBBER, M.D., Marlette, Mich., to Miss C. Loise Kohler of Rochester, N. Y., June 5.

JAMES ARTHUR FURNISH, M.D., Moberly, Mo., to Miss Norma M. Maupin, at Shelbina, Mo., June 12.

HARRIS GARCELON, M.D., Los Angeles, Cal., to Miss Genevieve Smith, at Los Angeles, June 1.

ROBERT UNDERWOOD, M.D., Detroit, Mich., to Miss Katherine Edgington of Memphis, Tenn., June 5.

ROBERT JOHN MATHEWS, M.D., Clarinda, Iowa, to Miss Ruth Kimball of Shenandoah, Iowa, June 11.

HAROLD M. DOOLITTLE, M.D., Dallas, Texas, to Miss Leda Stimson of Grand Rapids, Mich., June 4.

ALONZO H. STEWART, M.D., to Miss Ethel J. Sexton, both of Philadelphia, at Portsmouth, Va., June 5.

GEORGE FRANCIS BRACKEN, M.D., Chicago, to Miss Emma Gillet of Gibson City, Ill., in Chicago, June 5.

WILLIAM ROBERT PETERS, M.D., Stanton, Neb., to Miss Maude Tannehill of Norfolk, Neb., June 5.

JOHN P. NELLIGAN, M.D., Cambridge, Mass., to Miss Gertrude H. O'Shea of Roxbury, Boston, recently.

WILLIAM WALLACE CARLETON, M.D., to Miss Charlotte Elizabeth Reamer, both of Waterloo, N. Y., June 5.

JOHN BRAZELTON FILLMORE DICE, M.D., to Miss Alice Cary Murphy, both of Morristown, Tenn., June 10.

JOSEPH VANDEVANTER MILTON, M.D., Hamilton, Va., to Miss Anna Page Maury, at Alexandria, Va., June 5.

PHILIP KINGSWORTH GILMAN, M.D., to Mrs. Ellen Burbank, both of Baltimore, at Wilmington, Del., in March.

EDMOND S. FERGUSON, M.D., Oklahoma City, Okla., to Miss Marie Haven of Denison, Texas, in Oklahoma City, June 6.

THEODORE JACOB ABBOTT, M.D., New York City, to Miss Marie Matthiessen of Cornwall-on-Hudson, N. Y., June 8.

WILLIAM F. LAUTERBACH, M.D., Dayton, Ohio, to Miss Jeannette Catherine Farrel of near Vandalia, Ohio, June 5.

Deaths

Felix Formento, M.D. University of Turin, Italy, 1857; a member of the American Medical Association; a surgeon in the Sardinian army during the war for Italian independence; surgeon in the Confederate service during the Civil War; in charge of the organization of the army medical service of Missouri and afterward chief surgeon of the Louisiana Hospital, Richmond, Va.; who won additional fame by his untiring efforts and skill during the epidemics of yellow fever in 1867 and 1878 in New Orleans; a member of the State Board of Health for two terms; vice-president of the Fourth International Congress of Hygiene and Demography in 1882; once president of the Orleans Parish Medical Society, and in 1891 president of the American Public Health Association; one of the most noted authorities in the country on hygiene and sanitation, died suddenly at his home in New Orleans, June 4, from cerebral hemorrhage, aged 70.

Valentine Mott Francis, M.D. New York University Medical College, New York City, 1859; a member of the Rhode Island and Newport County medical societies, and honorary president of the latter society; president of the Newport Historical Society; a life member of the Natural History Society of Newport; one of the founders of the New York Sanitary Association, and a life member of the New York Historical Society, died suddenly, June 7, from heart disease, at the home of his niece in West Roxbury, Mass., aged 72.

John Speed McLain, M.D. National Medical College, Medical Department of Columbian College, Washington, D. C., 1871; a member of the Medical Association of the District of Columbia and the American Therapeutic Society; acting assistant surgeon, U. S. Army, from 1878 to 1884, and president of the Board of Medical Examiners of the District of Columbia in 1891; died from kidney disease at his home in Washington, June 2.

Thomas Jefferson Riddell, M.D. Medical College of Virginia, Richmond, 1869; charter and honorary member of the Medical Society of Virginia, and member of the Henrico County Medical Society; a Confederate veteran and one of the oldest practitioners of Richmond, Va.; formerly a member of the city council, died at the Retreat for the Sick, Richmond, June 6, from nephritis, after an illness of several months, aged about 60.

Lewis T. Wilson, M.D. Washington University School of Medicine, Baltimore, 1872; of El Paso; formerly of Seymour, Texas, who had been ill for several years with diabetes, died May 6 at the Providence Hospital, El Paso, from the effects of self-inflicted stab wounds of the throat, arms and breast, aged 58.

Tobias Nagel, M.D. Cincinnati (Ohio) College of Medicine and Surgery, 1868; surgeon in the federal service during the Civil War and one of the leaders in the fight against yellow fever in New Orleans in 1878, died at his home in New Orleans, June 9, from paralysis, after a long illness, aged 78.

Alonzo Lawrence Stickney, M.D. Medical School of Harvard University, Boston, 1862; a member of the Massachusetts and Worcester North District medical societies; assistant surgeon in the Army during the Civil War, died at his home in Ashburnham, Mass., June 4, from heart disease.

Allen Henry Mead, M.D. Cleveland (Ohio) College of Physicians and Surgeons, 1901; a member of the Ohio State and Cuyahoga County medical societies; of Cleveland, Ohio, died at the Cleveland General Hospital, June 4, from pneumonia, after an illness of three weeks, aged 37.

Joseph D. Mansfield, M.D. Vermont Medical College, Woodstock, 1841; a member of the Massachusetts and Middlesex East District medical societies; one of the oldest practitioners of Massachusetts, died suddenly at his home in Wakefield, from angina pectoris, May 22, aged 90.

Isaac B. Walton, M.D. Vanderbilt University, Medical Department, Nashville, Tenn., 1880; a Confederate veteran; three times register of Cheatham County, Tenn., and for many years a local preacher, died at his home in Ashland City, Tenn., June 8, from senile debility, aged 81.

Richard M. Fairchild, M.D. University of Toronto, Faculty of Medicine; College of Physicians and Surgeons, Ontario, 1883; formerly of Boise, DeLamar, Placerville and Emmett, Idaho, died at St. Luke's Hospital, Boise, Idaho, June 4, from cerebral thrombosis, aged 53.

Robert D. Wilkin, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1871; a pioneer resident of Cass County, Iowa; some-time city alderman, city clerk, mayor and supervisor of Atlantic, died at his home in that city, June 6, from arteriosclerosis, aged 69.

Jay Wesley Schooley, M.D. University of Vermont College of Medicine, Burlington, 1862; Toronto University Medical Faculty, 1863; member of the College of Physicians and Surgeons of Ontario, 1866; died suddenly at his home in Welland, Ont., June 4, aged 70.

John D. F. Lever, M.D. Jefferson Medical College, Philadelphia, 1860; of Blythewood, S. C.; a member of the Columbia Medical Society, and a veteran of the Civil War, was drowned in Cedar Creek while attempting to ford the stream, June 1, aged 72.

Jacob B. Shupe, M.D. Western Pennsylvania Medical College, Medical Department Western University of Pennsylvania, Pittsburg, 1890; died at his home in Westernport, Md., June 5, from heart disease, after an illness of one week, aged 56.

George Emerson King, M.D. Medical Department of Western Reserve University, Cleveland, Ohio, 1885; a member of the Kalamazoo Academy of Medicine, died suddenly, June 6, in the Kalamazoo Hospital, from cerebral hemorrhage, aged 47.

Cyrenius A. David, M.D. Rush Medical College, Chicago, 1869; University of the City of New York, 1881; died at his home in Chicago, June 11, from septicemia due to an operation wound, after an illness of two months, aged 62.

Edgar Archer, M.D. Medical College of Virginia, Richmond, 1848; said to have been the oldest practitioner of Manchester, Va., died at the residence of his daughter in Richmond, from paralysis, after an illness of three years, aged 79.

George W. Murray, M.D. Chattanooga (Tenn.) Medical College, Medical Department of Grant University, 1899; of Glenalice, Tenn., was drowned while attempting to ford White's Creek, near Rockwood, Tenn., June 9, aged 38.

William C. Kloman, M.D. University of Maryland School of Medicine, Baltimore, 1855; surgeon in the Confederate service during the Civil War, died at his home in North Baltimore, Md., June 2, from pneumonia, aged 72.

William Frederick Detwiler, M.D. New York Homeopathic Medical College and Hospital, New York City, 1849; died at his home in Hellertown, Pa., June 8, from chronic nephritis, after an illness of two years, aged 85.

James Ezra Gray, M.D. New York University Medical College, New York City, 1885; formerly a practitioner of Rochester, N. Y., and London, Ont., was found dead in his room in a hotel in Rochester, May 28, aged 45.

William L. Foster, M.D. Starling Medical College, Columbus, Ohio, 1866; surgeon of the One Hundred and Twenty-sixth Ohio Volunteer Infantry during the Civil War, died suddenly, June 6, at his home in Waco, Neb.

Benjamin F. Brown, M.D. Rush Medical College, Chicago, 1867; a member of the Illinois State and Pulaski County medical societies, died at his home in Pulaski, Ill., January 15, after a short illness, aged 71.

A. Harold Myers, M.D. University of Maryland School of Medicine, Baltimore, 1882; division surgeon of the Baltimore & Ohio Railroad, died at his home in Rochester, Pa., June 10, from neurasthenia, aged 51.

W. R. Richards, M.D. University of Louisville (Ky.) Medical Department, 1888; of Cardwell, Mo., died at St. Joseph's Infirmary, Fort Worth, Texas, from heart disease, after an illness of six years, aged 48.

Charles R. Graham, M.D. Medical Department of the University of Tennessee, Nashville, 1899; formerly of Murfreesboro, Tenn., but of late a resident of Mississippi, died in Chattanooga, Tenn., recently.

John Lawrence Ryan, M.D. College of Physicians and Surgeons, Baltimore, Md., 1892; of Malden, Mass., died from tuberculosis recently in Calumet, Mich., after an illness of two years, aged 38.

Aristotle Eldridge, M.D. University of Nashville (Tenn.) Medical Department, 1858; died at his home in Palmyra, Texas, June 3, from senile debility, after an illness of several weeks, aged 79.

Claudius Van Deusen, M.D. Berkshire Medical College, Pittsfield, Mass.; for more than 50 years a resident of Leeds, N. Y., died in that village February 13, from heart disease, aged 83.

John Joseph McGuigan, M.D. Medical School of Harvard University, Boston, 1890; died at his home in Lynn, Mass., June 3, from hemorrhage of the stomach, after a short illness, aged 43.

Charles Daniel Christman, M.D. College of Physicians and Surgeons, Baltimore, 1886; of Wiconisco, Pa., died in a hospital in Philadelphia, June 8, after an operation for cholelithiasis, aged 50.

Charles C. Ward, M.D. Medical College of Ohio, Medical Department of the University of Cincinnati,1891; died June 2, at his home in Clarksville, Ohio, after a prolonged illness, aged 45.

William A. Klesa, M.D. College of Physicians and Surgeons, Baltimore, 1896; died in Sweden Township, Potter County, Pa., recently, from tuberculosis, after an illness of two years, aged 35.

George A. Knight, M.D. Long Island College Hospital, Brooklyn, N. Y., 1867; county surveyor of Clarion County, Pa., for five years, died at his home in Salem, Pa., June 2, aged 69.

Henry E. Whitsey, M.D. Medical Department of Western Reserve University, Cleveland, Ohio, 1888; died suddenly from heart disease, at his home in Cleveland, June 5, aged 44.

James H. Hepburn, M.D. Jefferson Medical College, Philadelphia, 1886; formerly a resident of Jersey Shore, Pa., died May 26, at Tucson, Ariz., after a long illness, aged 43.

Benjamin H. Nice, M.D. Jefferson Medical College, Philadelphia, 1877; died at his home in Hamburg, Pa., June 4, from paralysis, after an illness of five weeks, aged 51.

John A. Loughridge, M.D. Kentucky School of Medicine, Louisville, 1891; president of the board of health of Eldorado, Ark., died at his home in that place, May 25.

Merrill J. Galloway, M.D. University of Pennsylvania Department of Medicine, Philadelphia, 1894; died at his home in Philadelphia, June 4, aged 35.

Julia A. H. Walker, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1880; died at her home in Harrisburg, Pa., recently, aged 64.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending June 15, 1907:

Shockley, M. A. W., and Duncan, W. H., asst.-surgs., appointed members of an Army retiring board to meet at Fort Wright, Wash.

Corbusier, W. H., deputy surgeon general, ordered to make inspection of the medical department, hospitals and sanitary conditions of posts in Department of the Columbia.

Truby, W. F., asst.-surgeon, leave of absence extended ten days.

Glennan, J. D., surgeon, granted two months' leave of absence to take effect on or about July 25, 1907.

Lyster, W. J. L., asst.-surgeon, assigned to special duty in San Francisco, Cal., until July 5, when he will proceed to Manila, P. I., in compliance with orders heretofore issued.

Sweazy, V. E., asst.-surgeon, leave of absence extended fifteen days.

Bingham, E. G., asst.-surgeon, assigned to duty at the Army General Hospital, Presidio of San Francisco, Cal., and granted leave of absence for thirty days.

Hutton, P. C., asst.-surgeon, leave of absence extended fourteen days.

Collins, C. C., asst.-surgeon, relieved from duty at Fort Walla, Walla, Wash., and ordered to Fort Riley, Kan.

Harris, J. R., asst.-surgeon, relieved from duty at Fort Assiniboine, Mont., and ordered to Fort Worden, Wash., for duty.

Munson, E. L., surgeon, granted thirty days' leave of absence.

Frick, E. B., surgeon, granted thirty days' leave of absence.

Wallace, G. S., contract surgeon, arrived in New York on one month's leave from Henry Barracks, P. R.

Brooks, J. D., contract surgeon, granted leave of absence for five days.

Worthington, J. A., contract surgeon, ordered from Harrison, Ark., to Fort Oglethorpe, Ga., for duty.

Huber, E. G., contract surgeon, ordered from Martinsburg, Mo., to Fort Snelling, Minn., for duty.

Casaday, G. H., dental surgeon, returned to Army General Hospital, Presidio of San Francisco, Cal., from temporary duty at Presidio of Monterey, Cal.

Mason, G. L., dental surgeon, granted an extension of one month to his leave of absence.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for week ending June 15, 1907:

Page, J. E., surgeon, granted leave for three months when discharged from treatment at Naval Hospital, Mare Island, Cal.

McGuigan, J. H., pharmacist, unexpired portion of sick leave revoked, ordered to Naval Hospital, New York, for treatment and observation.

Dickinson, D., medical director, ordered to additional duty as a member of Naval Retiring Board, Washington, D. C.

Zalesky, W. J., P. A. surgeon, commissioned passed assistant surgeon from April 12, 1907.

Kelley, H. L., asst.-surgeon, appointed assistant surgeon June 6, 1907.

Hibbett, C. T., medical inspector, detached from Naval Rendezvous, St. Louis, Mo., June 15; ordered to Bureau Medicine and Surgery, Navy Department, for temporary duty.

Alfred, A. R., surgeon, detached from course instruction, Naval Medical School, Washington, June 15; ordered to Naval Rendezvous, Pittsburg, Pa.

Pryor, J. C., surgeon, detached from Naval Medical School Hospital, Washington, D. C., June 15; ordered to Naval Hospital, Yokohama, sailing from San Francisco, via steamer *Siberia*, about July 25.

Odell, H. E., surgeon, detached from duty at Naval Hospital, Washington, D. C., June 20; ordered to Naval Hospital, Mare Island, Cal.

Moore, J. M., surgeon, detached from Naval Rendezvous, Minneapolis; ordered to Naval Rendezvous, Chattanooga, Tenn.

Verner, W. W., P. A. surgeon, detached from Naval Rendezvous, Pittsburg, Pa., June 15; ordered to Naval Rendezvous, St. Louis.

Bogan, F. M., P. A. surgeon, detached from instruction at Naval Medical School, Washington, D. C., June 15; ordered to Naval Rendezvous, Minneapolis.

Plummer, R. W., P. A. surgeon, detached from instruction at Naval Medical School, Washington, D. C.; ordered to *Constellation* and to additional duty at Naval Training Station, Newport, R. I.

Jones, A. McK., acting asst.-surgeon, detached from Naval Rendezvous, Chattanooga, Tenn., and ordered to Washington, D. C., July 1, for examination for assistant surgeon, then wait orders.

Pleadwell, F. L., surgeon, detached from duty at Naval Hospital, Yokohama, ordered home to wait orders.

Payne, Jr., J. H., P. A. surgeon, detached from course instruction at Naval Medical School, Washington, D. C., ordered to Naval Rendezvous, Providence, R. I.

Steadman, W. G., acting asst.-surgeon, detached from Naval Rendezvous, Providence, R. I.; ordered to Washington, D. C., July 1 for examination for appointment as assistant surgeon and then to wait orders.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended June 12, 1907.

Currie, D. H., P. A. surgeon, relieved from duty at San Francisco Quarantine Station, and directed to proceed to Honolulu, T. H., for temporary duty.

Bready, J. E., acting asst.-surgeon, granted leave of absence for four days, from June 15, 1907.

Hunter, W. R., acting asst.-surgeon, granted leave of absence for fourteen days, from June 10, 1907.

Mason, W. C., acting asst.-surgeon, granted leave of absence for six days, from June 23, 1907.

Royster, W. L., acting asst.-surgeon, granted leave of absence for seven days, from June 9, 1907, under Paragraph 210, Service Regulations.

Stuart, Albert F., acting asst.-surgeon, granted leave of absence for fifteen days, from July 1, 1907.

Thompson, W. R. F., acting asst.-surgeon, directed to proceed from Coatsacoalcos, Mexico, to Salina Cruz, Mexico, for special temporary duty, upon completion of which to rejoin his station.

Townsend, F., acting asst.-surgeon, granted leave of absence for fourteen days, from June 6, 1907.

Walker, T. D., acting asst.-surgeon, granted leave of absence for ten days, from June 25, 1907.

Ward, J. LaB., acting asst.-surgeon, granted leave of absence for seven days, from June 10, 1907, under Paragraph 210, Service Regulations.

La Grange, J. V., pharmacist, directed to proceed from Savannah, Ga., to Camp Perry, Fla., for special temporary duty, on completion of which to rejoin his station.

Carlton, C. G., pharmacist, granted leave of absence for 30 days, from July 1, 1907.

Van Ness, G. I., pharmacist, granted leave of absence for 21 days, from May 30, 1907.

BOARD CONVENED.

A board of medical officers was convened to meet at Galveston, Texas, June 10, 1907, for the physical examination of an officer in the Revenue-Cutter Service. Detail for the Board: P. A. Surgeon G. M. Corput, chairman; Acting Asst.-Surgeon W. H. Gammon, Recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended June 14, 1907:

SMALLPOX—UNITED STATES.

Illinois: Chicago, June 1-8, 7 cases.
Indiana: Evansville, June 6, 1 case.
Kansas: Kansas City, June 1-8, 6 cases.
Kentucky: Covington, June 1-8, 2 cases; Henderson, May 1-31, 1 case; Louisville, May 31-June 6, 5 cases.
Iowa: Ida County, May 1-31, 3 cases.
Michigan: Saginaw, May 25-June 1, 4 cases.
New York: New York, June 1-8, 5 cases, 1 death.
North Carolina: Twenty-two counties, April 1-30, 213 cases; Charlotte, June 1-8, 1 case.
Ohio: Cincinnati, May 31-June 7, 1 case; Columbus, May 1-31, 18 cases.
Texas: Galveston, May 24-June 1, 4 cases (1 from S. S. *Hanover*)
Washington: Spokane, May 25-June 1, 6 cases.

SMALLPOX—FOREIGN.

China: April 20-27, Hankau 3 cases; Shanghai, 1 case, 14 deaths; Tientsin, present.
France: Paris, May 11-18, 13 cases, 1 death.
Germany: May 11-18, general; 17 cases: Mannheim, 1 death.
Great Britain: Southampton, May 18-25, 1 case.
India: Bombay, May 7-14, 3 deaths.
Italy: General, May 16-23, 19 cases: Torre Annunziata, May 19-20, 2 cases; Turin, May 12-19, 4 cases.
Japan: Nagoya, May 15, epidemic.
Madeira: Funchal, May 12-26, 25 cases, 3 deaths.
Mexico: Aguas Calientes, May 25-June 1, 20 deaths.

Russia: Moscow, April 20-May 4, 17 cases, 4 deaths; Odessa, May 11-18, 4 cases, 1 death.
Spain: Valencia, May 19-26, 4 cases.
Turkey: Bassorah, May 4-11, 5 cases.

YELLOW FEVER.

Brazil: Manaos, May 4-11, 1 death.
Cuba: Habana, June 6, 1 from Santa Clara Province; San Nicolas, June 7, 2 cases.
Guatemala: May 29, Gualan, present; Zacapa, present.
West Indies: Trinidad, Port of Spain, May 11-18, 2 cases, 1 death.

CHOLERA.

India: Bombay, May 11-14, 1 death; Rangoon, April 27-May 4, 9 deaths.

PLAGUE.

Africa: Cape Colony, King Williams Town, April 22-May 4, 3 cases, 2 deaths.
Germany: Groden, June 3, 1 case on S. S. *Wharfedale* from Buenos Aires.
India: Bombay, May 7-14, 188 deaths; Rangoon, April 27-May 4, 58 deaths.
Japan: Osaka, May 15, 5 cases; Yokahama, May 30, present.
Turkey: Djeddah, May 6-11, 13 cases, 12 deaths; Island of Bahrein, May 22, epidemic.
West Indies: Trinidad, June 11, 2 deaths.

Association News

MINUTES OF THE SECTIONS

American Medical Association, Fifty-eighth Annual Session, Atlantic City.

The following are the proceedings of the sections at the Atlantic City session, June 4-7, 1907:

Section on Practice of Medicine.

TUESDAY, JUNE 4—AFTERNOON.

The meeting was called to order at 8 p. m. in the Casino Hall, Steel Pier, by Dr. D. T. Coleman, Atlanta, Ga., chairman.

Dr. Alexander Lambert, New York, nominated Dr. H. M. Michel, Atlanta, Ga., secretary *pro tem*, who was elected.

The chairman announced the nominating committee as follows: Drs. W. S. Thayer, Baltimore; Allen A. Jones, Buffalo, and J. A. Witherspoon, Nashville, Tenn.

Dr. John A. Lichty, Pittsburg, read a paper on "The Early and Premonitory Symptoms of Progressive Pernicious Anemia." Discussed by Drs. Herrick, Chicago; Thayer, Baltimore; Goodwin, Mt. Vernon, N. Y.; McCaskey, Ft. Wayne, Ind.; Elmhorn, New York; Anders, Philadelphia; Davis, Chicago; Hoover, Cleveland; Smithies, Ann Arbor, and Lichty, Pittsburg.

Dr. James Rae Arnelill, Denver, read a paper on "Observations on Digestive Condition in Pulmonary Tuberculosis." Discussed by Drs. Hutchinson, New York; Daland, Philadelphia; Lichty, Pittsburg; Witherspoon, Nashville, Tenn., and Arnelil, Denver.

Dr. H. F. Harris, Atlanta, Ga., read a paper on "Investigation of the Continued Fevers of Southern Georgia." Discussed by Drs. Witherspoon, Nashville, Tenn.; Wood, Wilmington, N. C.; Lichty, Pittsburg; Lambert, New York City; Fussell, Philadelphia; Harris, Atlanta, Ga.

WEDNESDAY, JUNE 5—MORNING.

This session was a joint meeting with the Sections on Surgery and Anatomy and on Pathology and Physiology. For the proceedings see the minutes of the former, below.

WEDNESDAY, JUNE 5—AFTERNOON.

Dr. Allen A. Jones, Buffalo, read a paper on "The Abdominal Symptoms of Thoracic Disease." Discussed by Drs. Hoover, Cleveland; Stengel, Philadelphia; Lambert, New York City; Thayer, Baltimore; Nelison, Milwaukee, and Jones, Buffalo.

Dr. Arthur R. Elliott, Chicago, read a paper on "Cardiac and Vascular Accompaniments of Diabetes Meilitus." Discussed by Drs. Stark, New York City; Stearns, New York City; Elliott, Chicago.

"The Venous Pulse and Some of Its Applications," by Drs. L. C. Grosh, Toledo, Ohio, and Arthur R. Cushny, London, was read by the former. Discussed by Drs. Dock, Ann Arbor, Mich.; Hirschfelder, Baltimore; Norris, Philadelphia, and Grosh, Toledo.

Dr. C. F. Hoover, Cleveland, read a paper on "The Tone of the Respiratory Center in Tabes Dorsalis." Discussed by Drs. Jones, Buffalo, and Hoover, Cleveland.

Dr. G. E. Pfahler, Philadelphia, read a paper on "The Study of the Gastrointestinal Tract by Means of the Roentgen Rays." Discussed by Drs. Steele, Philadelphia; Grosh, Toledo; Anders, Philadelphia; Daland, Philadelphia; Jones, Buffalo; Johnston, Atlanta; Lichty, Pittsburg; Hutchinson, New York City, and Pfahler, Philadelphia.

THURSDAY, JUNE 6—MORNING.

Morning session was a joint meeting with the Section on Pharmacology and Therapeutics. For the proceedings see the minutes of the latter, below.

THURSDAY, JUNE 6—AFTERNOON.

The nominating committee made the following report: Chairman, Dr. C. F. Hoover, Cleveland; secretary, Dr. Joseph L. Miller, Chicago; delegate, Dr. George Dock, Ann Arbor, Mich.; alternate, Dr. L. C. Grosh, Toledo, and they were elected.

The committee to nominate an orator on medicine named Dr. W. S. Thayer, Baltimore, who was elected.

A paper on "Observations on Plague in India" (illustrated by lantern slides) was read by Dr. Judson Daland, Philadelphia.

A paper on "A Mixed Infection with Tertian and Quartan Malaria Occurring in a Case with Symmetrical Gangrene" was read by Dr. Edward J. Wood, Wilmington, N. C. Discussed by Drs. Dock, Ann Arbor, Mich.; Thayer, Baltimore, and Herrick, Chicago.

A paper on "The Opsonic Theory and Therapeutic Inoculation with Bacterial Vaccines" was read by Dr. G. W. Ross, Toronto. Discussed by Drs. Hollister, Hutchins, Detroit, and Ross, Toronto.

A paper on "A Critical Estimate of the Fermentation-Specific Gravity Method of Quantitating Sugar in Diabetes" was read by Dr. Henry A. Christian, Boston. Discussed by Drs. Stearns, Thayer and Christian.

A paper on "Prepared and Predigested Foods was read by Dr. Graham Lusk, New York City. Discussed by Drs. Meltzer, Kinnear, Thayer, Witherspoon and Hutchinson.

FRIDAY, JUNE 7—MORNING.

Dr. C. H. Bunting, Charlottesville, Va., read a paper on "Experimental Anemia."

A paper on "The Unclnarial Anemia of Porto Rico," by Drs. B. K. Ashford and W. W. King, Washington, D. C., was read by Dr. Ashford.

Dr. R. Cabot, Boston, read a paper on "Differential Diagnosis of the Various Types of Anemias."

Dr. S. J. Meltzer, New York City, read a paper on "Treatment of Anemia."

These four papers were discussed by Drs. Potter, Indianapolis; Atkinson, Baltimore; Eshner, Philadelphia; Hutchinson, New York City; Jones, Buffalo; Black, Los Angeles; Hobson, Parkersburg, Iowa; Smithies, Ann Arbor; Bride, Los Angeles; Bunting, Charlottesville, Va.; Ashford, Washington; King, Washington; Cabot, Boston, and Meltzer, New York City.

Section on Obstetrics and Diseases of Women.

TUESDAY, JUNE 4—AFTERNOON.

The Section was called to order at 2:30 p. m. in the Dance Hall of the Steel Pier, by the chairman, Dr. J. Wesley Bovée, Washington.

The chairman then read his address, "The Status of the Fight Against Cancer of the Uterus."

Dr. E. E. Montgomery, Philadelphia, read a paper on "How Can We Lessen the Mortality of Uterine Cancer?" The paper was discussed by Drs. Thomas S. Cullen, Baltimore; G. Betton Massey, Philadelphia; Cleaves; H. J. Boldt, New York City; Strauss, New York City; Craig, Boston; J. H. Carstens, Detroit, and Montgomery.

The chairman announced that owing to the noise on the pier, the following sessions of the Section would be held in the Central Methodist Church.

The following were appointed as the nominating committee: Drs. C. C. Frederick, Buffalo; McMurtry, Louisville, and Craig, Boston.

Dr. Thomas S. Cullen, Baltimore, read a paper entitled "Parasitic Uterine Myomata." This was discussed by Drs. W. S. Stone, New York City; H. J. Boldt, New York City; C. C. Frederick, Buffalo; March, Boston; A. Gordon, Philadelphia; J. H. Carstens, Detroit; McGuire; D. Todd Gilliam, Columbus, Ohio; J. Wesley Bovée, Washington, and Cullen.

Dr. Emery Marvel, Atlantic City, read a paper on "Prevention of Peritoneal Adhesions by Adrenal Salt Solution, with Especial Reference to the Pelvis." This was discussed by Drs. Simpson, Lawrence, Wetherill, Craig, Frederick, Gilliam, Monash, Strauss and Marvel.

WEDNESDAY, JUNE 5—MORNING.

Dr. Francis D. Donoghue, Boston, read a paper on "Successful Treatment of Acute Postoperative Ileus; Incision and Drainage of the Intestine, with Report of Four Cases."

"Postoperative Intestinal Obstruction," by Dr. C. C. Frederick, Buffalo.

"The Prevention and Treatment of Postoperative Intestinal Obstruction," by Dr. Daniel H. Craig, Boston.

The three papers were discussed by Drs. Noble, Montgomery, Tabor Johnson, Stone, Gordon, Goldspohn, Deaver, Fry, Carstens, Bandler, Sears, Werder, Fisher, Frederick and Craig.

Dr. J. H. Carstens, Detroit, read a paper on "Ovary and Ovarian Tumors in the Inguinal Canal. Rare Condition. Report of Two Cases."

Dr. George Ward, Jr., New York City, read a paper on "Prolapse of the Ovary and Its Treatment."

WEDNESDAY, JUNE 5—AFTERNOON.

The papers of Drs. Carstens and Ward, read at the morning session, were discussed by Drs. Gilliam, Dorset, Boldt and Ward.

Dr. H. J. Boldt, New York City, read a paper on "Gonorrhea in Women."

Dr. S. W. Bandler, New York City, read a paper on "Unrecognized Gonorrhea in the Female."

The two papers were discussed by Drs. Peterson, Tabor Johnson, McMurtry, Miller, Garceau, Bacon, Branson, Price, Goelet, Philander, Harris, Craig, Cullen, Chandler, Boldt and Bandler.

Dr. William F. Metcalf, Detroit, read a paper on "Subtotal Abdominal Hysterectomy, with Total Excision of the Gland-bearing Tissue of the Cervix and a Perfected Restoration of the Supporting Ligaments."

Dr. H. O. Marcy, Boston, read a paper on "Plastic Surgery of the Pelvic Structures."

Dr. Walter B. Chase, Brooklyn, read a paper on "Buried Sutures and Ligatures, Their Material and Proper Use."

These three papers were discussed by Drs. Dorset, Goffe, Bonfield, Lawrence, B. F. Baer, Tabor Johnson, Metcalf, Marcy and Chase.

THURSDAY, JUNE 6—MORNING.

Dr. Frederick L. Good, Boston, exhibited a set of improved axis traction rods.

Dr. Charles Lester Leonard, Philadelphia, read a paper on "Some Advances in Ureteral and Renal Diagnosis."

Dr. Edgar Garceau, Boston, read a paper on "The Surgical Treatment of Ureteral Calculus in the Female."

These two papers were discussed by Drs. Hunner, Percy Brown, Bransford Lewis, Noble, Cole, Leonard and Garceau.

Dr. Charles P. Noble, Philadelphia, read a paper on "Cystocele."

Dr. D. Todd Gilliam, Columbus, read a paper on "Simplified Method of Operating for Cystocele."

These two papers were discussed by Drs. Goffe, Reynolds, Stone, Noble and Gilliam.

Dr. I. S. Stone, Washington, read a paper on "Salpingitis Caused by Appendicitis." This was discussed by Drs. Gilliam, Bandler, and Stone.

Dr. Philander A. Harris, Paterson, N. J., read a paper on "The Early Diagnosis of Tubal Pregnancy." This was discussed by Drs. J. Miller, Lawrence, Hunner, Carstens, Baldy and Harris.

Dr. Edward Reynolds, Boston, read a paper on "Constitutional Ill Equipment of the Patient as a Factor in Determining the Performance of the Primary Cesarean Section."

Dr. E. P. Davis, Philadelphia, read a paper on "The Delivery of Debilitated Women, with Especial Reference to the Child."

These two papers were discussed by Drs. George M. Boyd, Daniel Longaker, Philadelphia; Gray, Providence; Baldy, Philadelphia; Wetherill, Denver; Reynolds, Boston, and Davis.

THURSDAY, JUNE 6—AFTERNOON.

Dr. A. H. Goelet, New York City, read a paper on "Examination of the Gynecologic Patient." The paper was discussed by Drs. J. Riddle Goffe and Goelet.

Dr. Laura H. Branson, Iowa City, read a paper on "The Syncytium." This was discussed by Dr. I. S. Stone, Washington, and Dr. Branson.

Dr. Ellice McDonald, New York City, read a paper on "Sarcoma of the Uterus, with Report of Nine Cases." The paper was discussed by Drs. Craig, Carstens, Dorsett, Gilliam, Baldy and McDonald.

Dr. William D. Porter, Cincinnati, read a paper on "A Bimanual Method of Rotating in Occipito-posterior Vertex." The paper was discussed by Drs. Walter P. Manton and Porter.

The report of the nominating committee was adopted and the following were declared elected: Chairman, Dr. Walter B. Dorsett, St. Louis; vice-chairman, Dr. Charles P. Noble, Philadelphia; secretary, Dr. Walter P. Manton, Detroit; delegate, Dr. F. F. Simpson, Pittsburg; alternate, Dr. Thomas J. Watkins, Chicago.

Section on Surgery and Anatomy.

TUESDAY, JUNE 4—AFTERNOON.

The Section convened in the Dance Hall, Steel Pier, and was called to order by the chairman, Dr. Arthur D. Bevan, at 2 p. m.

The chairman then delivered his address, and in consonance with a suggestion made therein, Dr. Charles Powers, Denver, moved that the chairman of the Section be empowered to appoint a committee of five, of which the chairman shall be a member, the committee to have power to appoint subcommittees, the original committee to be known as the Anesthesia Commission of the Section on Surgery and Anatomy of the American Medical Association. The duties of the committee shall be to collect and analyze data relating to anesthesia and report annually to the Section. Further, that the representative of the Section in the House of Delegates be asked to request an appropriation to cover the necessary expenses of the committee. The motion was carried.

"Intestinal Perforation in Typhoid Fever. Its Surgical Treatment, with Report of Case," by Dr. J. E. Allaben, Rockford, Ill. Discussed by Drs. J. B. Murphy, L. J. Hammond,, Fox, Bartlett, Morris, Bachelor and Allaben.

"An Operation for Exstrophy of Bladder," by Dr. J. T. Bottomley, Boston. Discussed by Drs. Young, Hunner, Connell, Frank, Vance and Bottomley.

"How May Our Present Methods in Medical Illustration be Improved?" by Mr. M. Brödel, Baltimore. Discussed by Dr. Mayo.

"Gall-Duct Obstruction Caused by Movable Kidney," by Dr. M. B. Tinker, Ithaca, N. Y. Discussed by Dr. R. T. Morris.

"Bier's Treatment in Chronic and Acute Surgical Infectious Diseases," by Dr. W. Meyer, New York. Discussed by Drs. Grant, Schmieden, Hollister, Smithers and Meyer.

WEDNESDAY, JUNE 5—MORNING.

This was a joint session with the Sections on Practice of Medicine and Pathology and Physiology, devoted to a symposium on exophthalmic goiter.

"Physiology of Exophthalmic Goiter," by Dr. S. P. Beebe, New York.

"Pathology of Exophthalmic Goiter," by Dr. W. G. MacCallum, Baltimore.

"Diagnosis of Exophthalmic Goiter," by Dr. L. F. Barker, Baltimore.

"Medical Treatment of Exophthalmic Goiter," by Dr. R. B. Preble, Chicago.

"Surgical Treatment of Exophthalmic Goiter," by Dr. Albert Kocher, Berne, Switzerland.

These five papers were discussed by Drs. Halsted, Billings and Mayo.

WEDNESDAY, JUNE 5—AFTERNOON.

"Osteoplastic Operations," by Prof. E. Küster, Marburg, Germany. Discussed by Dr. J. B. Murphy.

"Technic of Appendectomy," by Dr. J. A. Wyeth, New York City. Discussed by Drs. Cannaday, Dawbarn, Marvel, v. Zwalenburg and Wyeth.

"Operation of Gastrojejunostomy and the Physiologic Results," by Dr. H. J. Paterson, London, England. Discussed by Drs. Gilbride, Cannon, Maury and Paterson.

"Vaccine Therapy of Surgical Infections Controlled by the Opsonic Index: Reports of Results," by Drs. L. L. McArthur and J. C. Hollister, Chicago.

"Pelvic Articulations, with Reference to the Differentiation Between Lesions of These Articulations and the Many Pelvic Disorders," by Dr. J. E. Goldthwait, Boston.

"Methods of Treating Tuberculous Joint Disease," by Dr. John Ridlon, Chicago.

"Personal Surgical Errors: Foreign Bodies in the Peritoneal Cavity," etc., by Dr. A. MacLaren, St. Paul, Minn.

"Local Anesthesia in General Surgery," by Dr. J. F. Mitchell, Washington, D. C.

THURSDAY, JUNE 6—MORNING.

SYMPOSIUM ON ILEUS.

"Colic," by Prof. K. G. Lennander, Upsala, Sweden.

"Experimental Studies of Intestinal Obstruction," by Mr. R. D. McClure, Baltimore.

"Physiologic Observations on Experimentally Produced Ileus," by Drs. Walter B. Cannon and F. T. Murphy, Boston.

"Relation of the General Practitioner to Strangulated Hernia," by Dr. J. B. Roberts, Philadelphia.

"Postoperative Ileus," by Dr. Frank Martin, Baltimore.

"Dynamic Ileus," by Dr. John C. Munro, Boston.

"Resection for the Relief of Intestinal Obstruction," by Dr. W. J. Mayo, Rochester, Minn.

"New Method of Intestinal Anastomosis," by Dr. E. W. Andrews, Chicago.

These eight papers were discussed by Drs. Meltzer, MacCallum, Maury, Mitchell, Beck, Murphy, Deaver, McGraw, Richardson and Hemmeter.

THURSDAY, JUNE 6—AFTERNOON.

"Diabetes in Surgical Relations," by Dr. A. E. Halstead, Chicago. Discussed by Drs. Stark, Horsley and Ochsner.

The executive committee reported the following nominations for officers of Section: Chairman, Dr. Rudolph Matas, New Orleans; vice-chairman, Dr. J. C. DaCosta, Philadelphia; secretary, Dr. Willard Bartlett, St. Louis; delegate, Dr. Charles N. Dowd, New York.

On motion, the secretary was instructed to cast the unanimous ballot of the Section for the election of these nominees.

On motion, the executive committee was empowered to fill any vacancies that might occur during the year.

Dr. George W. Crile, Cleveland, Ohio, was unanimously elected orator on surgery for the next annual meeting.

"Trigger Finger," by Dr. R. F. Weir, New York City.

"Excision of Rectum, Sigmoid and Part of Descending Colon; with Implantation of the Colon into the Anus," by Dr. E. Archibald, Montreal, Canada.

"Direct Transfusion of Blood," by Dr. George W. Crile, Cleveland, Ohio.

"Paraffin Injection Treatment of Inguinal Hernia," by Dr. M. L. Harris, Chicago. Discussed by Drs. DeGarmo, Roberts, Bevan and Harris.

"Treatment of Pseudoarthrosis and Delayed Callus Formation by Injection of Blood," by Dr. V. Schmieden, Bonn, Germany. Discussed by Dr. Dawbarn.

"Technic of Operation for Cancer of Breast," by Dr. M. F. Porter, Fort Wayne, Ind. Discussed by Drs. Rodman and Porter.

FRIDAY, JUNE 7—MORNING.

"Experimental Pathology and Surgical Treatment of Erysipelas," by Dr. E. LaPlace, Philadelphia. Discussed by Drs. Ochsner and LaPlace.

"Case of Benign Melanosis," by Dr. J. C. Stewart, Minneapolis.

"Anatomy of Palate, Normal and Cleft," by Dr. T. W. Brophy, Chicago.

"Amebic Abscess of Liver," by Dr. J. C. McDill, Manila, P. I. Discussed by Drs. Powers, Cushing and McDill.

"Management of Dislocation at Shoulder Joint Complicated by Fracture of Neck of Humerus," by Dr. H. A. Royster, Raleigh. Discussed by Dr. Kocher.

"Results of Operative Treatment of Deformed Fractures," by Dr. C. Beck, New York. Discussed by Drs. Frank and Beck.

The following telegram was read, addressed to Dr. Mayo: "*Vivat Societas Medica Americana*," from T. Kocher, Berne, Switzerland.

Section on Ophthalmology.

TUESDAY, JUNE 4—AFTERNOON.

The meeting was called to order at 2:30 p. m. by the chairman, Dr. G. C. Savage.

Chairman's address, "The Duality of Man," by Dr. G. C. Savage, Nashville, Tenn.

"Cataract Extraction: 1. Is the Case Operable? 2. Preparation of the Patient. 3. The Anesthetic," by Dr. E. E. Jack, Boston.

"The Indication for the Extraction of Cataract and the Iridectomy," by Dr. John E. Weeks, New York City.

"The Delivery of the Lens for the Extraction of Cataract; Irrigation of the Anterior Chamber, and the First Toilet of the Wound," by Dr. L. Webster Fox, Philadelphia.

"The Immediate After-treatment of Cataract Operations (with bandage)," Dr. William H. Wilder, Chicago.

"The Immediate After-treatment of Cataract Operations (without bandage"), by Dr. J. W. Scales, Pine Bluff, Ark.

"Operations for Secondary Cataract," by Peter A. Callan, New York City.

These six papers were discussed by Drs. Myles Standish, Boston; Casey A. Wood, Chicago; Frank Allport, Chicago; George E. de Schweinitz, Philadelphia; J. A. White, Richmond, Va.; Charles S. Bull, New York City; Borsch, Philadelphia; S. C. Ayres, Cincinnati, Ohio; Eugene Smith, Detroit; Peter A. Callan, New York City; E. C. Ellett, Memphis, Tenn.; Frank Todd, Minneapolis; Byington, Battle Creek, Mich.; S. L. Ledbetter, Birmingham, Ala.; L. A. W. Alleman, Brooklyn; F. B. Tiffany, Kansas City; Herman Knapp, New York City, and Prof. Carl Heas, Würzburg, Germany.

WEDNESDAY, JUNE 5—MORNING.

The report of the committee on "The Use of Prisms in Testing the Eye Muscles" was read and adopted as follows:

At the session of the Association, held in Boston last year, certain preambles and resolutions were presented by Dr. Lucien Howe, Buffalo, concerning uniform methods for making tests of the ability of the eyes to overcome prisms. These resolutions were referred to a committee of three, with instructions to report on the subject at the next annual session. That committee, therefore, submits the following:

"WHEREAS, Various differences now exist in the methods of making tests of the ability of the eyes to overcome prisms; and

"WHEREAS, These differences have given rise to much confusion of our ideas on the subject; therefore, be it

"*Resolved*, That it is the sense of the Section on Ophthalmology of the American Medical Association that hereafter when any member describes the ability of the eyes to overcome prisms, it is understood, unless otherwise specified, that

"(A) The test-object is such as to secure the most accurate fixation.

"(B) The test is made with the refraction corrected (with distance glasses for the distance tests and reading glasses for the near tests).

"(C) The test is not made under a cycloplegic.

"(D) The test is made with prisms from the trial case.

"(E) If prisms in series or revolving prisms are used, this

fact should be stated and it is then understood, unless otherwise specified, that the examiner begins with prisms which produce diplopia, and gradually decreases their strength to the point where the diplopia can be overcome."

LUCIEN HOWE,
EDWARD JACKSON,
ALEXANDER DUANE.

The report of the committee on "Standard Illumination of Visual Test Types" was read and adopted.

"Does the Opacity of Incipient Cataract ever Regain Transparency?" by Dr. Leartus Connor, Detroit. Discussed by Drs. G. O. Ring, Philadelphia; John Chase, Denver, Colo.; Herman Knapp, New York City; F. B. Tiffany, Kansas City, Mo.; W. O. Nance, Chicago; W. H. Snyder, Toledo, Ohio; John E. Weeks, New York City; Edward Jackson, Denver, Colo.; D. S. Lamb, Washington, D. C., and Leartus Connor, Detroit.

"The Loss of Vitreous Humor in the Extraction of Cataract," by Dr. J. M. Ray, Louisville. Discussed by Dr. L. W. Fox, Philadelphia; H. D. Bruns, New Orleans; F. B. Tiffany, Kansas City, Mo.; Samuel Theobald, Baltimore; Hiram Woods, Baltimore; A. R. Baker, Cleveland, Ohio; E. Morawetz, Louisville; C. A. Oliver, Philadelphia; D. W. Greene, Dayton, Ohio; D. S. Lamb, Washington, D. C.; F. Valk, New York City; W. Zentmayer, Philadelphia, and J. M. Ray, Louisville.

"Yeast Cells as a Probable Cause of Ulcerative Keratitis," by Dr. George P. Keiper, Lafayette, Ind. Discussed by Dr. F. B. Tiffany, Kansas City, Mo.

"Ligation of the Common Carotid Artery for Malignant Recurrent Hemorrhage of the Vitreous," by Dr. George S. Derby, Boston. Discussed by Drs. W. R. Wilder, Chicago; J. E. Weeks, New York City; A. Greenwood, Boston; Harry Friedenwald, Baltimore; S. D. Risley, Philadelphia.

"Neuro-Fibroma of the Orbit; Krönlein Operation," by Dr. W. R. Parker, Ann Arbor, Mich. Discussed by Drs. Edward Jackson, Denver; H. Knapp, New York City; Harry Friedenwald, Baltimore; Charles O. Oliver, Philadelphia; E. C. Ellett, Memphis, Tenn.

"Metastatic Conjunctivitis in Gonorrhea," by Dr. James J. Carroll, Baltimore. Discussed by Drs. R. L. Randolph, Baltimore; Hiram Woods, Baltimore; H. Knapp, New York City; W. C. Posey, Philadelphia; S. L. Ledbetter, Birmingham, Ala.; John Green, Jr., St. Louis; H. A. Rothrock, West Chester, Pa.

WEDNESDAY, JUNE 5—AFTERNOON.

Address: "Modern Views on Physiology and Pathology of Accommodation," by Prof. Carl Hess, Würzburg, Germany.

"Some Considerations in the Treatment of Lachrymal Obstruction," by Dr. Mark D. Stevenson, Akron, Ohio. Discussed by Drs. G. E. de Schweinitz Philadelphia; C. R. Holmes, Cincinnati; William Wilder, Chicago; A. G. Bennett, Buffalo, N. Y.; A. E. Prince, Springfield, Ill.; Frank Todd, Minneapolis; J. L. Borsch, Philadelphia.

"A Method of Performing Tenotomy which Enables the Operator to Limit the Effect as Required," by Dr. Frank C. Todd, Minneapolis. Discussed by Drs. A. E. Davis, New York City; H. W. Würdemann, Milwaukee; W. R. Broughton, New York City; F. Valk, New York City; Ziegler, Philadelphia; A. E. Bulson, Jr., Ft. Wayne, Ind.; G. E. Savage, Nashville, Tenn.

"The Treatment of Strabismus in Young Children," by Dr. A. R. Baker, Cleveland, Ohio. Discussed by Drs. Linn Emerson, Orange, N. J.; W. Reber, Philadelphia; A. L. Derdiger, Chicago; A. E. Davis, New York City; Lucien Howe, Buffalo; Oscar Wilkinson, Washington, D. C.

"Congenital Squint," by Dr. W. C. Posey, Philadelphia. Discussed by Dr. A. Duane, New York City.

"Ocular Rotations in Paresis," by Dr. Francis Valk, New York City. Discussed by Drs. George H. Price, Nashville, Tenn.; A. Duane, New York City; G. E. Savage, Nashville, Tenn., and W. Reber, Philadelphia.

THURSDAY, JUNE 6—MORNING.

"Ocular Neurasthenia," by Dr. Hiram Woods, Baltimore. Discussed by Drs. S. D. Risley, Philadelphia; Henry Barnes, New Orleans; Lucien Howe, Buffalo; Henry Gradle, Chicago; Professor Hess, Würzburg, Germany; S. L. Ledbetter, Birmingham, Ala.; G. E. de Schweinitz, Philadelphia.

"A Protest Against the Employment of Paraffin Injections Near the Eyes," by Dr. E. Davis, New York City. Discussed by Drs. W. G. Thompson, New York City; Frank Todd, Minneapolis; F. J. Parker, New York City; Harmon Smith, New York City; J. L. Gorsch, Philadelphia; W. Marple, New York City.

"Further Observations on Retinitis Punctata," by Dr. H. Gradle, Chicago. Discussed by Drs. M. Wiener, St. Louis, and D. S. Lamb, Washington, D. C.

"Myopia Associated with Opacities of the Cornea," by Dr. W. L. Pyle, Philadelphia.

"Indications for the Employment of Adrenalin Chlorid, in Connection with Cocain in Operation on the Eye," by Dr. Samuel Theobald, Baltimore. Discussed by Drs. S. L. Ziegler, Philadelphia; P. Veasey, Philadelphia; J. E. Weeks New York City, and G. H. Price, Nashville, Tenn.

"The Value of Tuberculin T. R. as a Diagnostic and Therapeutic Agent in the Recognition and Treatment of Tuberculosis of the Eye, with Report of Cases," by Dr. C. S. Bull, New York City. Discussed by Drs. Peter A. Callan, New York City; S. L. Ziegler, Philadelphia; Herman Knapp, New York City; William Wilder, Chicago; J. E. Weeks, New York City; A. E. Bulson, Jr., Ft. Wayne, Ind.; G. W. Van Benschoten, Providence, R. I., and Professor Hess, Würzburg, Germany.

THURSDAY, JUNE 6—AFTERNOON.

The executive committee reported the following nominations for officers for the ensuing year; Chairman, Dr. William Wilder, Chicago; vice-chairman, Dr. W. C. Posey, Philadelphia; secretary, Dr. A. E. Bulson, Jr., Ft. Wayne, Ind.; delegate, Dr. W. Marple, New York City. These were duly elected.

"Premiums Paid to Experience," by Drs. F. T. Rogers and G. W. Van Benschoten, Providence, R. I. Discussed by Drs. L. H. Taylor, Wilkes-Barre, Pa.; E. E. Holt, Portland, Maine; A. Greenwood, Boston; Robert Randolph, Baltimore; O. Wilkinson, Washington, D. C.; A. E. Bulson, Ft. Wayne, Ind.; A. R. Baker, Cleveland, Ohio; L. A. W. Alleman, Brooklyn; J. L. Borsch, Philadelphia.

"The Preventive Treatment of Transferred Ophthalmitis (so-called Sympathetic Ophthalmia"), by Dr. C. A. Oliver, Philadelphia. Discussed by Drs. C. R. Holmes, Cincinnati, Ohio; W. Zentmayer, Philadelphia; J. A. Donovan, Butte City, Mont.; J. L. Borsch, Philadelphia; A. E. Bulson, Ft. Wayne, Ind.; Robert Randolph, Baltimore.

"The Relation of the Circumlental Space to the Causation of Glaucoma, as Shown by the Würdemann Lamp," by Dr. J. A. Tenney, Boston.

"The Surgical Treatment of Chronic Glaucoma," by Dr. S. D. Risley, Philadelphia.

These two papers were discussed by Drs. H. V. Würdemann, Milwaukee; J. E. Weeks, New York City; H. Bruns, New Orleans; J. L. Borsch, Philadelphia; M. Wiener, St. Louis; Professor Hess, Würzburg, Germany; S. L. Ziegler, Philadelphia; G. O. McReynolds, Dallas, Texas, and Hiram Woods, Baltimore.

"Comparative Potency of Hyoscin and Scopolamin Hydrobromid in Refraction Work," by Dr. W. Reber, Philadelphia. Discussed by Drs. A. E. Bulson, Ft. Wayne, Ind.; S. D. Risley, Philadelphia; C. A. Oliver, Philadelphia; A. Greenwood, Boston, and S. L. Ziegler, Philadelphia.

"The Parabolic Reflector for Illuminating Test Charts," by Dr. Mortimer Frank, Chicago. Discussed by Dr. W. Sweet, Philadelphia.

FRIDAY, JUNE 7—MORNING.

"The Treatment of Ulcers of the Cornea," by Dr. H. Bert Ellis, Los Angeles, Cal. Discussed by Drs. E. A. Shumway, Philadelphia; L. H. Taylor, Wilkes-Barre, Pa.; J. A. Tenney, Boston; V. A. Donovan, Butte, Mont.; A. Barkan, San Francisco; W. H. Roberts, Pasadena, Cal.; G. E. Savage, Nashville, Tenn.; Leartus Connor, Detroit; S. L. Ledbetter, Birmingham, Ala., and Professor Hess, Würzburg, Germany.

"The Treatment of Purulent Ophthalmia," by Dr. G. H. Price, Nashville, Tenn. Discussed by Drs. J. E. Weeks, New York City; H. Woods, Baltimore; A. E. Prince, Springfield, Ill.; E. C. Ellett, Memphis, Tenn.; F. R. Wood, Marshalltown, Iowa; L. H. Taylor, Wilkes-Barre, Pa.; Mark Stevenson, Akron, Ohio; Edward Jackson, Denver; Leartus Connor, Detroit; C. H. Williams, Boston; Oscar Wilkinson, Washington, D. C.

"The Treatment of Iritis," by Dr. E. C. Ellett, Memphis, Tenn. Discussed by Drs. Allen Greenwood, Boston; H. W. Ring, New Haven, Conn.; J. F. Byington, Battle Creek, Mich.; A. E. Davis, New York City; J. Shorter, Macon, Ga.; C. H. Williams, Boston; W. R. Parker, Detroit; D. S. Lamb, Washington, D. C.; Edward Jackson, Denver; Leartus Connor, Detroit; H. Woods, Baltimore; G. E. Savage, Nashville, Tenn.; E. C. Ellett, Memphis, Tenn.

"The Treatment of Interstitial Keratitis," by Dr. H. H. Martin, Savannah, Ga. Discussed by Drs. Hiram Woods, Baltimore; W. H. Roberts, Pasadena, Cal.; Herbert Harlan, Baltimore; A. A. Hubbell, Buffalo, N. Y.; E. G. Bernstein, Kalamazoo, Mich., and D. S. Lamb, Washington, D. C.

"The Treatment of Chronic Trachoma," by Dr. A. E. Prince, Springfield, Ill. Discussed by Drs. J. C. Hancock, Brooklyn, N. Y.; Herbert Harlan, Baltimore; Oscar Wilkinson, Washington, D. C.; J. E. Weeks, New York City, and A. E. Prince, Springfield, Ill.

Section on Laryngology and Otology.

TUESDAY, JUNE 4—AFTERNOON.

The meeting was called to order by the chairman, Dr. S. MacCuen Smith. The chairman then read his address.

Dr. D. Braden Kyle read a paper entitled "Chemistry of the Saliva and Nasal Secretions, and Its Relation to Hay Fever."

On motion the regular order of business was suspended to listen to the address of Prof. Gustave Killian, Freiburg. A vote of thanks was tendered Prof. Killian for his practical and interesting paper.

Dr. H. Holbrook Curtis read a paper entitled "Etiology and Treatment of Hay Fever."

The two papers on hay fever were discussed by Drs. J. Solis-Cohen, Philadelphia; G. L. Richards, Fall River, Mass.; Emil Meyer, New York City; M. H. Post, St. Louis; Hanau W. Loeb, St. Louis; G. N. Jack, Buffalo, N. Y.; D. Braden Kyle, Philadelphia; H. Holbrook Curtis, New York City.

Dr. Hanau W. Loeb read a paper on "Anatomy of the Middle Turbinate." Discussed by Drs. Robert Levy, Denver, Colo.; H. P. Mosher, Boston; J. O. Roe, New York City, and H. W. Loeb, St. Louis.

The chairman appointed as executive committee Drs. Otto T. Freer, J. F. Barnhill and Dunbar Roy.

WEDNESDAY, JUNE 5—MORNING.

Joseph L. Goodale read a paper entitled "Pathology of the Middle Turbinate." Discussed by Drs. Emil Mayer, New York, and O. T. Freer, Chicago.

Dr. Joseph A. Stucky, Lexington, Ky., read a paper on "Non-operative Treatment of Middle Turbinate Diseases." Discussed by Dr. Joseph A. White, Richmond.

"Indications for Resection of the Middle Turbinal," by Dr. William A. Casselberry, Chicago. Discussed by Drs. Joseph S. Gibb, Philadelphia, and Carolus M. Cobb, Boston.

Dr. George L. Richards, Mass., read a paper on "Technic of the Operation for Removal of the Middle Turbinate." Discussed by Dr. W. L. Ballenger, Chicago.

These four papers were generally discussed by Drs. O. T. Freer, Chicago; Robert Levy, Denver, Colo.; C. R. Holmes, Cincinnati; R. C. Myles, New York City; H. W. Loeb, St. Louis; C. F. Welty, San Francisco; A. R. Thrasher, Cincinnati, Ohio; Joseph Beck, Chicago; J. L. Goodale, Boston; J. A. Stucky, Lexington, Ky.; S. MacCuen Smith, Philadelphia, and W. E. Casselberry, Chicago.

WEDNESDAY, JUNE 5—AFTERNOON.

"Treatment of Hypertrophic and Intumescent Rhinitis with the Galvano-Cautery," by Drs. E. F. Ingals and S. A. Friedberg, was read by Dr. Ingals. Discussed by Drs. H. Stolte, Milwaukee; F. J. Quinlan, New York City; C. F. Welty, San Francisco; F. D. Smythe, Memphis, Tenn.; J. F. Barnhill, Indianapolis, Ind.; J. F. Byington, Battle Creek, Mich.; J. Beck, Chicago; C. R. Holmes, Cincinnati; Anderson, Detroit; J. Solis-Cohen, Philadelphia; E. F. Ingals, Chicago.

W. G. B. Harland, Philadelphia, read a paper on "The Larynx

in Locomotor Ataxia. Discussed by Drs. J. F. Byington, Michigan; Emil Mayer New York; W. E. Casselberry, Chicago; J. Solis-Cohen, Philadelphia; H. P. Mosher, Boston, and W. G. B. Harland, Philadelphia.

A paper entitled "Intranasal Suture" was read by Sidney Yankauer of New York. Discussed by Drs. J. O. Roe, New York City; M. L. Wilson, New Jersey; Emil Mayer, New York; J. Beck, Chicago; H. Stolte, Milwaukee; Yankauer, and Prof. G. Killian, Germany.

Chevalier Jackson, Pittsburg, read a paper on and demonstrated "The Gastroscope." Discussed by Prof. G. Killian and Dr. Jackson in closing.

Victor C. Pederson, New York, read a paper on a "New Method for all the Ordinary Sequences of Anesthesia," and presented the apparatus.

Cullen F. Welty, San Francisco, and J. F. Barnhill, Indianapolis, demonstrated instruments.

THURSDAY, JUNE 6—MORNING.

A paper was read by Henry O. Reik, Baltimore, on "The Pathology of Middle Ear Suppuration." Discussed by Drs. J. F. Barnhill, Indianapolis, and Frank Allport, Chicago.

The regular order of business was suspended while Professor Kuster, Marburg, Germany, read a paper, which was discussed by Dr. A. B. Randall, Philadelphia.

Samuel Theobald, Baltimore, read a paper on "Conservative Treatment of Chronic Suppuration of the Middle Ear." Discussed by Dr. Dunbar Roy, Atlanta, Ga.

James E. McKernon, New York City, read a paper entitled "Phlebitis Following Middle Ear Disease." Discussed by Dr. E. E. Holt, Portland, Maine.

"Ossiculectomy in Chronic Middle Ear Suppuration" was the title of a paper read by F. L. Jack, Boston. Discussed by Dr. A. R. Duell, New York.

G. E. Shambaugh, Chicago, read a paper entitled "Some Important Surgical Relations of the Temporal Bone." Discussed by Drs. B. A. Randall, Philadelphia, and E. DeW. Wales, Indianapolis.

Edward B. Dench, New York City, read a paper on "The Major Operative Treatment of Middle Ear Suppuration and Indications for the Same." Discussed by Drs. Cunningham, Georgia; G. L. Richards, Massachusetts; C. F. Welty, San Francisco; J. A. Stucky, Kentucky; H. O. Reik, Baltimore; Frank Allport, Chicago; W. L. Ballenger, Chicago; A. B. Randall, Philadelphia; Henry Gradle, Chicago; J. F. McKernon, New York City, and E. B. Dench.

THURSDAY, JUNE 6—AFTERNOON.

The election of officers for the ensuing year resulted as follows: Chairman, Hanau W. Loeb, St. Louis; vice-chairman, Dunbar Roy, Atlanta, Ga.; secretary, W. Sohier Bryant, New York City; executive committee, Robert C. Myles, New York City; O. T. Freer, Chicago; S. MacCuen Smith, Philadelphia; delegate, O. T. Freer, Chicago; alternate, S. MacCuen Smith, Philadelphia.

G. S. Richards, Fall River, Mass., moved that Prof. Gustav Killian, Freiburg, Germany, be made an honorary member of the Section, and that Delegate O. T. Freer take the necessary steps.

The chairman announced that general discussion would be resumed on papers that had been read on acute diseases of the middle ear. These were discussed by A. E. Prince, Illinois; J. A. Stucky, Kentucky; G. L. Richards, Massachusetts; C. H. Welty, California; Wilkinson, Washington, D. C.; J. F. Byington, Michigan; A. B. Randall, Pennsylvania; J. F. Barnhill, Indiana; J. Beck, Illinois; Frank Allport, Illinois; Cunningham, Georgia; ; Kirkendall New York; H. O. Reik, Maryland; F. L. Jack, Pennsylvania.

The chairman announced that Prof. G. Killian would give a clinic at Jefferson Medical College Hospital, Philadelphia, Saturday at 9 a. m., to which all were invited.

Dr Cullen F. Welty, San Francisco, read a paper entitled "The Indications for Operative Interference in Central Affections Due to Middle Ear Suppuration." Discussed by A. B. Randall, Philadelphia; Cunningham, Georgia; J. A. Stucky, Kentucky, and C. F. Welty.

The chairman announced that Professor Killian had been made an honorary member of the American Medical Association and of the Section on Laryngology and Otology. Professor Killian thanked the Section for the honor done him.

By unanimous vote the retiring officers were given a vote of thanks for their able administration of the duties pertaining to their offices.

Section on Hygiene and Sanitary Science.

TUESDAY, JUNE 4—AFTERNOON.

The Section convened at the Chalfonte and was called to order by the chairman, Dr. Prince A. Morrow, New York City. In the absence of the secretary, Dr. S. T. Armstrong, New York City, was designated secretary.

The chairman read his address, "Hygiene in Relation to Heredity."

Dr J. Clifton Edgar, New York City, read a paper on "Gonococcus Infection as a Cause of Blindness, Vulvo-vaginitis and Arthritis."

After representations by the delegate of the Section, Dr. Denslow Lewis, Chicago, it was moved by the secretary, seconded and unanimously carried, "That Dr. Lewis be requested to invite the attention of the House of Delegates to their failure to act on the resolutions of this Section and request consideration of the resolutions that were introduced last year."

The resolutions referred to were on the healthfulness of continence and the advisability of reporting venereal diseases.

Dr. Joseph Taber Johnson, Washington, D. C., read a paper on "The Influence of Gonorrhea as a Factor of Depopulation."

Dr Edward L. Keyes, Jr., New York City, read a paper entitled "Syphilis as a Cause of Depopulation and Race Deterioration."

Dr J. Newton Hunsberger, Skippack, Pa., read a paper on "Artificial Childlessness and Race Suicide."

These three papers were discussed by Drs. Prince A. Morrow, New York City; J. H. Stolper, Krebs, Okla.; G. T. Swarts, Providence, R. I.; Liston H. Montgomery, Chicago, Ill.; H. P. Jack, Canisteo, N. Y.; H. D. Holton, Brattleboro, Vt.; S. A. Knopf, New York City; G. Lloyd Magruder, Washington, D. C.; G. Werther Drake, Hollins, Va.; W. F. Snow, Leland Standford, Jr., University, California.

Dr. Richard Cole Newton, Montclair, N. J., read a paper on "Educational Problems." Discussed by Drs. Snow, Leland Stanford, Jr., University, Cal.; Weck, Sunbury, Pa.; Prince A. Morrow, New York City; H. P. Jack, Canisteo, N. Y.; S. A. Knopf, New York City; J. Newton Hunsberger, Skippack, Pa.; G. Werther Drake, Hollins, Va.; Paul Paquin, Asheville, N. C.; Liston H. Montgomery, Chicago, and Richard Cole Newton, Montclair, N. J.

WEDNESDAY, JUNE 5—MORNING.

Dr. H. M. Bracken, Minneapolis, read a paper on "Necessity of State Control of Inland Waters." Discussed by Drs. Henry D. Holton, Brattleboro, Vt.; J. H. Stolper, Krebs, Okla.; William C. Gorgas, Ancon, Canal Zone, Panama; C. Hampson Jones, Baltimore; G. F. Swarts, Providence, R. I.; W. C. Chapman, Toledo, O.; William H. Sanders, Montgomery, Ala.; Liston H. Montgomery, Chicago, and W. H. Donaldson, Fairfield, Conn.

In the absence of Mr. X. G. Goodnough, Boston, his paper "Stream Polution and its Prevention," was read by Mr. William S. Johnson, Boston, who immediately thereafter read his own paper, "The Quality of Public Water Supplies."

Mr. Geo. C. Whipple, New York City, read a paper on "Modern Methods of Sewage Purification and the Relative Applicability."

Mr. Harry C. Clark, Boston, read a paper entitled "Filtration of Water."

Mr. George T. Moore, Washington, D. C., read a paper on "Sewage Purification by Septic Tanks and Chemical Precipitation."

Dr. Wm. Hallock Park, New York City, read a paper on "Bacteriology of Ice."

Adjournment was taken without discussion owing to lateness of the hour.

WEDNESDAY, JUNE 5—AFTERNOON.

Dr. George W. Goler, Rochester, N. Y., read a paper on "The Municipal Regulation of the Milk Supply."

Dr. Thomas Darlington, New York City, read a paper on "The Methods of Dealing with the Milk Supply of New York City," illustrated by lantern slides.

Dr. James O. Jordan, Boston, read a paper on "Boston's Campaign for Clean Milk."

Dr G. Lloyd Magruder, Washington, D. C., read a paper on "The Milk Supply of Washington," illustrated by lantern slides.

These four papers were discussed by Drs. C. Hampson Jones, Baltimore; W. F. Snow, Leland Stanford, Jr., University, California; Seneca Egbert, Philadelphia; H. M. Bracken, Minneapolis, and G. Lloyd Magruder, Washington, D. C.

THURSDAY, JUNE 6—MORNING.

The chairman appointed Drs. Swarts, Providence, R. I.; Denslow Lewis, Chicago, and John S. Fulton, Baltimore, a nominating committee, to report at the afternoon session nominations for the section offices.

Dr W. Gilman Thompson, New York City, read a paper entitled "Modern Hospital Construction," (illustrated with lantern slides).

Dr. Albert J. Ochsner, Chicago, read a paper on "Important Practical Points of Economy in Hospital Construction." These two papers were discussed by Drs. W. H. Donaldson, Fairfield, Conn.; Geo. H. M. Rowe, Boston; W. C. Wyman, Washington, D. C.; J. H. Stolper, Krebs, Oklahoma; Seneca Egbert, Philadelphia; W. Gilman Thompson, New York City and Albert J. Ochsner, Chicago.

Dr Livingston Farrand, New York City, read a paper entitled "Educational Propaganda for the Prevention of Tuberculosis."

Dr G. Abraham Jacobi, New York City, read a paper on "Smoke in Relation to Health."

Dr. Edward O. Otis, Boston, read a paper on "Public Provision for Advanced Cases of Tuberculosis."

Discussion on the three papers was deferred until the afternoon session.

THURSDAY, JUNE 6—AFTERNOON.

Dr. Swarts presented the report of the nominating committee as follows: For chairman, Dr. William C. Gorgas, Ancon, Canal Zone, Panama; for vice-chairman, Dr. Seneca Egbert, Philadelphia; for secretary, Dr. H. M. Bracken, St. Paul, Minn.; for delegate, Dr. Denslow Lewis, Chicago; for alternate, Dr. N. K. Foster Sacramento, Cal.; for section on state medicine, Dr. Charles Harrington, Boston. Dr. Swarts asked that the names be voted on individually rather than collectively. This was done with the result that Drs. Gorgas, Egbert and Bracken were unanimously elected.

Dr. Bracken nominated as delegate Dr. N. K. Foster, Sacramento, Cal. Dr. Foster was elected. Dr. W. C. Chapman, Toledo, Ohio, was elected alternate delegate, and Dr. Charles Harrington, Boston, was elected orator on state medicine.

Dr. Bracken tendered his resignation as secretary-elect and moved the election to that office of the secretary-incumbent, Dr. Armstrong, which was unanimously elected.

Dr. C. C. Browning, Monrovia, Cal., read a paper on "Public Provision for Incipient Cases of Tuberculosis. Sanatoria and Dispensaries."

The chairman here withdrew, and Dr. Swarts assumed the post.

Dr. Paul Paquin, Asheville, N. C., read a paper on "The Question of Climate in the Treatment of Pulmonary Tuberculosis."

The papers of both sessions of the day were then discussed by Drs. J. H. Stolper, Krebs, Okla.; C. C. Friedrichs, Buffalo, N. Y.; J. E. Stubbert Lilberty, N. Y.; L. H. Montgomery, Chicago; Gordon Wilson, Baltimore; G. W. Drake, Hollins, Va.; C. H. Irion, New Orleans; G. T. Swarts; Edward O. Otis, Boston; J. C. Foltz, Philadelphia; G. F. Patton, New Orleans; C. C. Browning, Monrovia, Cal.; Paul Paquin, Asheville, N. C.

The hour being late, the paper, "Sanitary Control of Dairy Farms," by Dr. John S. Fulton, Baltimore, was read by title with the unanimous consent of the Section.

Section on Diseases of Children.

TUESDAY, JUNE 4—AFTERNOON.

The meeting was called to order at 2.15 by the chairman, J. Ross Snyder, Birmingham, Ala., who then read his address, entitled "The Status of the Child."

The next paper was by Dr. John Rührah, Baltimore, entitled "Some Needs of Institution Children." Discussed by Drs. E. E. Graham, Philadelphia; R. B. Gilbert, Louisville, Ky.; J. L. Morse, Boston, R. U. Walker, Chicago; Van Ness, Kansas City; Kerley, New York City, and Rührah.

A paper entitled "The Relation of the Physician to Defective

School Children" was read by Dr. W. C. Hollopeter, Philadelphia. Discussed by Drs. Cotton, Chicago; Fairbanks, Boston; Van der Slice, Oak Park, Ill.; Ammann, Missouri; Ager, Brooklyn; Abt, Chicago; Ryan, Des Moines, Iowa; Kelly, Ohio; Orr, Nebraska; Snyder, Birmingham, Ala., and Hollopeter, Philadelphia.

A paper entitled "A Preliminary Report on the Etiology of Infantile Atrophy" was read by Dr. A. H. Wentworth, Boston. Discussed by Drs. Fairbanks, Gilbert, Cattermole and Wentworth.

A paper on "The Ferments of Milk and Their Relation to Pasteurization" was read by Dr. Roland G. Freeman, New York City. Discussed by Drs. Hamill, Douglass, Cotton, Churchill and Freeman.

WEDNESDAY, JUNE 5—MORNING.

The first paper was entitled "The Greatest Menace to Whole Milk in Cities' Supplies," by Dr. Alexander McAllister, Camden. "Certified Milk and the General Milk Supply of Louisville" was the title of a paper read by Dr. Henry Enos Tuley, Louisville, Ky. These two papers were discussed by Drs. Le Boutillier, McGruder, Gilbert, Ager, Friedlander Kilmer, Southworth, Johnson, Murphy, Barkley, Van der Slice, Boorse, Merrick, Lane, Kerley, Mercer, McAllister and Tuley.

The next paper was entitled "The Disadvantages of Low Proteids in Infant Feeding," by Dr. Alfred Hand, Philadelphia. Discussed by Drs. Southworth, Churchill, Gilbert, Mercer, Morse, Douglass, Pisek, Van der Slice and Hand.

A paper entitled "The Importance of the Early Recognition and Treatment of Rachitis" was read by Dr. Thomas S. Southworth, New York City. Discussed by Drs. Fairbanks, Kirk, Morse, Abt, Kerley, Hamill, Goodenow, Royston, Gray, Gilbert, Cattermole, Sill and Southworth.

WEDNESDAY, JUNE 5—AFTERNOON.

A paper entitled "The Relation of the Pathologic Conditions of the Nasopharynx to the Dental Arches" was read by Dr. E. A. Bogue, New York City. Discussed by Drs. Stanton, Lowenburg and Bogue.

"Adenoids in Infancy," was the title of a paper by Dr. John Lovett Morse, Boston. Discussed by Drs. Hollopeter, Walker, Kilmer and Morse.

A paper entitled "Prophylaxis in Cerebrospinal Meningitis" was read by Dr. A. Seibert, New York City. Discussed by Drs. Churchill, Hand, English, Fairbanks, Meyer, Solis-Cohen and Seibert.

"Urinary Infections in Children" was the title of a paper by Dr. Isaac A. Abt, Chicago. Discussed by Drs. Cotton, Graham, Morse, Mitchell, Knox, Boorse and Abt.

THURSDAY, JUNE 6—MORNING.

A paper on "The Opsonic Index in Tuberculosis of Children; Its Relation to the Tuberculin Test" was read by Dr. Thomas Morgan Rotch, Boston. Discussed by Drs. Kerley, Churchill, Abt, Ager, Fisher, Fairbanks, Walker, Roland and Rotch.

A paper entitled "Tardy-Mal-nutrition; Its Treatment by Rest and Diet," was read by Dr. Charles Gilmore Kerley, New York City. Discussed by Drs. Rotch, Royster, Stoyle, Van der Slice, Fisher, Le Boutillier, Ammann, Morse, Douglass, McKee and Kerley.

"The Percussion of the Chest in Infants and Children" was the title of a paper by Dr. S. M. Hamill, Philadelphia. Discussed by Drs. Cattermole, Lowengren, McKee, Fairbanks, Hand and Hamill.

A paper on "Symptom-Complex of a Series of Intestinal Cases in Children, with Pathologic Findings," was read by Dr. Thomas D. Parke, Birmingham, Ala. Discussed by Drs. Abt, Gilbert, Morse, Walker, Mercer, Kerley, Wentworth and Parke.

A paper entitled "Five Hundred and Fifty Cases of Whooping Cough Treated by Means of the Abdominal Belt" was read by Dr. Theron Wendell Kilmer, New York City. Discussed by Drs. Douglass, Cattermole, Gilbert, Kerley, Fisher and Kilmer.

THURSDAY, JUNE 6—AFTERNOON.

Dr. Fairbanks moved that a committee of three be appointed by the chairman to investigate the present status of public education of children in relation to their physical and psychical development, and instruct this committee to report the result of their investigations at the next session. This motion was carried. The appointments were as follows: Dr. Fairbanks in the east; Dr. Van der Slice in the middle states, and Dr. Cattermole in the west.

The report of nominating committee on officers for next session was then read as follows: Chairman, Dr. E. E. Graham, Philadelphia; secretary, Dr. Samuel Walker, Chicago; delegate, Dr. Thomas Parke, Birmingham, Ala.; Alternate, Dr. G. R. Pisek, New York City. The report of committee was adopted.

A paper on "Scarlatina and Dukes' Disease" was read by Dr. A. C. Cotton, Chicago. Discussed by Drs. Van der Slice, Ager and Cotton.

A paper on "Malformations of the Rectum and Imperforate Anus" was read by Dr. Samuel W. Kelley, Cleveland, Ohio. Discussed by Drs. Royce and Kelley.

The next paper was by Dr. Louis Fischer, New York City, entitled "Clinical Observations in Acute Infectious Diseases, with Bedside Notes from the Willard Parker Hospital." Discussed by Drs. Douglass, Fairbanks, Royce, Kilmer, Lowengren and Fischer.

A paper entitled "Differential Diagnosis Between Measles and Rotheln was read by Dr. H. McClanahan, Omaha. Discussed by Drs. Mitchell, Earl, Walker and McClanahan.

A paper on "An Interesting Case of Incontinence of Feces" was read by Dr. Maurice Osthelmer, Philadelphia. Discussed by Drs. Fairbanks, Lowengren and Osthelmer.

A paper entitled "The Essential Insufficiency of the Heart in Childhood" was read by Dr. Arthur Willard Fairbanks, Boston. Discussed by Drs. Cattermole and Fairbanks.

A paper on "Diagnosis and Treatment of Convulsions in Children" was read by Dr. Lowenburg, Philadelphia. Discussed by Drs. Graham, Abt, Brinker, McClanahan and Lowengren.

Section on Nervous and Mental Diseases.

TUESDAY, JUNE 4—AFTERNOON.

The Section was called to order at 2:20 p. m. by the chairman, Dr. Morton Prince, Boston, who delivered the chairman's address.

"A Study of Four Hundred and Thirty-seven Cases of Alcoholic Insanities" was the title of a paper read by Dr. Alfred Gordon, Philadelphia. Discussed by Drs. Smith Ely Jelliffe, New York; F. X. Dercum, Philadelphia, and Gordon.

"Hysteria, Its Nature and Its Position in Nosology," was read by Dr. F. X. Dercum, Philadelphia. Discussed by Drs. L. H. Mettler, Chicago; Smith Ely Jelliffe, New York; Morton Prince, Boston, and closed by Dr. Dercum.

A paper on "The Influence of the Ductless Glands over Metabolism, with Illustrative Cases," was read by Dr. Leo M. Crafts, Minneapolis. Discussed by Dr. J. Madison Taylor, Philadelphia.

A paper entitled "Acute Unilateral Ascending Paralysis" was read by Dr. Carl D. Camp, Philadelphia.

WEDNESDAY, JUNE 5—MORNING.

A paper on "Landry's Paralysis; Recovery; Partial Relapse and Complete Recovery," was read by Dr. John K. Mitchell, Philadelphia. Discussed by Drs. McGregor, Saginaw, Mich.; J. H. McBride, Pasadena, Cal., and A. A. Eshner, Philadelphia.

"Clinical Study of Arteriosclerosis" was the title of a paper by Drs. George L. Walton and W. E. Paul, Boston, read by Dr. Walton. Discussed by A. R. Allen, Philadelphia; W. M. Leszynsky, New York City; Hersman, Pittsburg; John K. Mitchell, Philadelphia, and G. L. Walton, Boston.

A paper on "The Mental State in Aphasia" was read by Dr. C. W. Burr, Philadelphia. Discussed by Dr. L. H. Mettler, Chicago.

"Deep Injections of Alcohol for Trifacial Neuralgia, with Report of Cases," was the title of a paper read by Dr. Hugh T. Patrick, Chicago. Discussed by Drs. Philip Zenner, Cincinnati; John Punton, Kansas City; Guy Hinsdale, Hot Springs, Va., and H. T. Patrick, Chicago.

A paper on "Report of a Case of Intracranial Tumor Resulting from Traumatism" was read by Dr. William M. Leszynsky, New York City.

"A New Clinical Type in which Ascending Transverse Myelitis is Accompanied by Osseous Ankylosis and Growth of the Vertebræ and Extreme Anterior Curvature" was the title of a paper read by Dr. Graeme M. Hammond, New York City. Discussed by Drs. William G. Spiller and A. A. Eshner, Philadelphia.

"Spinal Localization as Shown by a Case of Acute Hemorrhagic Meningomyelitis and Partial Softening and Cavity Formation" was the title of a paper read by Dr. James Hendrie Lloyd, Philadelphia. Discussed by Drs. Sullivan, Massachusetts; W. G. Spiller, Philadelphia, and J. H. Lloyd, Philadelphia.

On motion of Dr. Hersman, Pittsburg, the chairman was directed to appoint a committee of three to draw up suitable resolutions on the death of Dr. William J. Herdman of Ann Arbor, Mich.

WEDNESDAY, JUNE 5—AFTERNOON.

A paper on "Facial Hemiatrophy" was read by Dr. Theo. Klingman, Ann Arbor, Mich.

"Differential Diagnosis of Tumors of the Cerebello-Pontile Angle" was the title of a paper read by Dr. T. H. Weisenburg, Philadelphia.

A paper on "Hemicraniosis and Cure of Brain Tumor by Operation" was read by Dr. William G. Spiller, Philadelphia.

A paper entitled "Brain Tumor with Jacksonian Spasm and Unilateral Laryngeal Paralysis, the Growth Localized and Removed," by Drs. John L. Atlee, Lancaster, Pa., and Charles K. Mills, Philadelphia, was read by Dr. Atlee. Discussed by Drs. C. K. Mills and W. G. Spiller, Philadelphia.

A paper on "Removal of a Subcortical Cystic Tumor at Second Stage Operation without Anesthesia," by Drs. H. M. Thomas and Harvey W. Cushing, Baltimore, was read by Dr. Thomas.

The foregoing papers on brain tumor were discussed by Drs. F. X. Dercum, Philadelphia; A. E. Sterne, Indianapolis; T. H. Weisenburg, W. G. Spiller, C. K. Mills, H. M. Thomas and H. W. Cushing.

A paper on "Subacute Combined Cord Degeneration, with Report of Twenty Cases," was read by Dr. Julius Grinker, Chicago. Discussed by Dr. H. T. Patrick, Chicago.

THURSDAY, JUNE 6—MORNING.

The chairman appointed the following nominating committee: Drs. J. H. McBride, Pasadena, Cal.; Smith Ely Jelliffe, New York City, and H. M. Thomas, Baltimore.

A paper on "The Significance of Changes in the Optic Nerves in Certain Affections of the Cerebrospinal System" was read by William Campbell Posey, Philadelphia. Discussed by Drs. H. T. Patrick, Chicago; H. M. Thomas, Baltimore; W. G. Spiller, Philadelphia, and W. C. Posey, Philadelphia.

A paper on "General Reflections on the Subject of the Psychology of Dementia Præcox" was the title of a paper read by Dr. Smith Ely Jelliffe, New York City. Discussed by Drs. White, Washington; L. H. Mettler, Chicago; Morton Prince, Boston, and S. E. Jelliffe, New York City.

A paper on "Injuries of the Spinal Cord" was read by Dr. Alfred Reginald Allen, Philadelphia. Discussed by Drs. W. G. Spiller, Philadelphia; A. E. Sterne, Indianapolis; W. A. Jones, Minneapolis; H. M. Thomas, Baltimore; C. K. Mills, Philadelphia; P. Zenner, Cincinnati; Hersman, Pittsburg; Morton Prince, Boston, and A. R. Allen, Philadelphia.

A paper on "Sensory Dissociation as a Symptom" was read by Dr. L. H. Mettler, Chicago. Discussed by Dr. C. K. Mills, Philadelphia, L. H. Mettler, Chicago.

"Nervousness: Its Significance and Treatment," was the title of a paper read by Dr. John Punton, Kansas City, Mo. Discussed by Drs. Julius Grinker, Chicago; Potter, Rochester, N. Y.; Sullivan, Massachusetts, and J. Punton, Kansas City, Mo.

A paper on "Headache as a Symptom of Local Disorders," by Drs. Frederic Coggeshall and William E. McCoy, Boston, was read by Dr McCoy. Discussed by Drs. Kelly and H. T. Patrick, Chicago.

"Relationship Between Referred Visceral Pains. The Sympathetic System and Various Methods of Therapy," was the title of a paper read by Dr. S. D. Ludlum, Philadelphia. Discussed by Drs. Snow, Vermont; C. K. Mills, Philadelphia; Morton Prince, Boston, and S. D. Ludlum, Philadelphia.

The nominating committee presented their report, showing the following nominations: Chairman, Dr. T. H. Weisenburg, Philadelphia; secretary, Dr. William Alexander Jones, Minneapolis; delegate, Dr. Morton Prince, Boston; alternate, Dr. L. Harrison Mettler, Chicago; all of whom were elected.

Dr. William Alexander Jones, Minneapolis, presented the following resolution:

Resolved, That the executive officers of this Section be instructed and authorized to arrange, if possible, for the printing

of all papers to be read at the next annual meeting of the Section on Nervous and Mental Diseases of the Association, and that papers shall be sent to the Secretary at a time sufficiently early in his discretion to be printed and circulated among the members of the Section at least one month before the annual meeting; furthermore, be it

Resolved, That the essayist be given five minutes to present an abstract of his paper, and that the member selected to open the discussion be allowed ten minutes, and that other discussions be limited to five-minute periods.

After considerable discussion, Dr. C. K. Mills, Philadelphia, moved to amend the resolution by changing the time allowed the essayist from "five" to "ten" minutes, which amendment was accepted, and the resolution as amended was adopted.

Dr. Julius Grinker, Chicago, moved that the next annual session of the Section be limited to three days, which motion was ruled out of order as contrary to the by-laws of the Association.

On motion of Dr. W. A. Jones, Minneapolis, its was decided to limit the number of papers at the next annual meeting of the Section to thirty.

On motion of Dr. C. K. Mills, Philadelphia, it was ordered that the resolution on the death of Dr. William J. Herdman, Ann Arbor, Mich., be accepted and spread on the minutes of the Section, and copies thereof sent to the various medical journals for publication.

Section on Stomatology.

TUESDAY, JUNE 4—AFTERNOON.

This Section convened at 2 p. m., and was called to order by the chairman, Dr. M. I. Schamberg, New York City, who then read the chairman's address.

Drs. H. C. Register, Philadelphia, and James McManus, Hartford, Conn., read their contributions to the symposium on "The Necessity for a Medical Education for Dentists, from the Standpoint of the Lay Public."

These three papers were discussed by Drs. Truman, Philadelphia; A. M. Steeves, Boston; E. S. Talbot, Chicago; E. A. Bogue, New York City; T. W. Brophy, Chicago, and M. I. Schamberg, New York City.

Dr. Grady read a paper on "The Dentist in the United States Navy." Discussed by Drs. J. McManus, Hartford, Conn; E. A. Bogue, New York City; V. A. Latham, Chicago; F. L. Fossume, New York City; T. W. Brophy, Chicago; M. I. Schamberg, New York City, and E. S. Talbot, Chicago.

Dr. Truman W. Brophy, Chicago, moved that it is the sense of this Section that the United States Government should appoint dental surgeons to serve the officers and enlisted men of the Navy and Marine Corps. The motion was carried.

WEDNESDAY, JUNE 5—MORNING.

The following were elected delegates to the International Congress of Stomatology: Drs. M. L. Rhein, New York City; C. O. Kimball, New York City; E. C. Bogue, New York City; G. V. I. Brown, Milwaukee, and E. S. Talbot, Chicago. These selections were confirmed by the House of Delegates.

The chairman appointed Drs. V. A. Latham, Chicago; S. G. Jackson, Vineland, N. J., and G. V. I. Brown, Milwaukee, as a committee on the nomination of officers for the coming year.

A paper contributed to the symposium on the "Necessity for a Medical Education for Dentists, as Viewed from the Standpoint of the Physician," was read by Dr. V. A. Latham, Chicago.

Dr. F. L. Fossume, New York City, read a paper on "The Common Ground of Dentistry and Medicine."

These two papers were discussed by Drs. F. A. Faught, Philadelphia; H. C. Register, Philadelphia; G. V. I. Brown, Milwaukee; J. E. Powers, Providence, R. I.; J. McManus, Hartford, Conn.; T. W. Brophy, Chicago; V. A. Latham, Chicago, and F. L. Fossume, New York City.

The chairman announced the temporary appointment of S. B. Luckie, of Chester, Pa., to take the place of G. F. Eames, of Boston and James E. Power of Providence, R. I., to take the place of H. P. Carlton, of San Francisco, on the Executive Committee, in order that the papers read before the Section may be approved for publication.

At this point a recess was taken until 2:15 p. m.

WEDNESDAY, JUNE 5—AFTERNOON.

The committee on the nomination of officers for the coming year reported as follows: Chairman, Dr. E. A. Bogue, New York City; vice-chairman, Dr. James E. Power, Providence, R. I.; secretary, Dr. E. S. Talbot, Chicago; delegate, Dr. M. L. Rhein, New York City, and as alternate, Dr. James McManus, Hartford, Conn. These were elected.

A paper on "False Statements Concerning Causes of Pathologic Conditions," was read by Dr. S. B. Luckie, Chester, Pa. Discussed by Drs. F. A. Faught, Philadelphia; V. A. Latham, Chicago; J. Truman, Philadelphia; M. I. Schamberg, New York City; H. C. Register, Philadelphia; G. V. I. Brown, Milwaukee; F. L. Fossume, New York City, and S. B. Luckie, Chester, Pa.

A paper on "The Relation of Upper Respiratory Obstruction to Oral Deformity; Simultaneous Treatment by Expansion of the Dental Arch," was read by Dr. Francis A. Faught, of Philadelphia. Discussed by Drs. G. H. Makuen, Philadelphia; G. V. I. Brown, Milwaukee; J. A. Gorman, Philadelphia. C. A. Hawley, Columbus, Ohio; E. A. Bogue, New York City, and F. A. Faught, Philadelphia.

"Acid Autointoxication the Principal Cause of Erosion and Abrasion," was the title of a paper read by Dr. Eugene S. Talbot, Chicago. Discussed by Drs. J. Truman, Philadelphia; G. V. I. Brown, Milwaukee; F. A. Faught, Philadelphia; V. A. Latham, Chicago, and E. S. Talbot, Chicago.

THURSDAY, JUNE 6—MORNING.

A paper on "Pregnancy: a Factor in the Etiology of Dental Diseases" was read by Dr. James E. Power, Providence, R. I. Discussed by Drs. V. A. Latham, Chicago; S. G. Jackson, Vineland, N. J.; M. I. Schamberg, New York City; A. M. Steeves, Boston; W. M. Dailey, New York City; E. S. Talbot, Chicago; S. B. Luckie, Chester, Pa., and J. E. Power, Providence, R. I.

THURSDAY, JUNE 6—AFTERNOON.

A paper on "A Case of Epidermoid Carcinoma of the Inferior Maxilla" was read by Dr. W. H. Potter, Boston. Discussed by Drs. V. A. Latham, Chicago; E. A. Bogue, New York City; J. E. Power, Providence, R. I.; M. I. Schamberg, New York City and W. H. Potter, Boston.

"Some Results from Orthodontia of the Deciduous Teeth," was the title of a paper read by Dr. E. A. Bogue, New York City. The paper was illustrated with lantern slides.

A paper was read by Dr. W. Sohler Bryant, New York City, on "The Mutual Developmental Dependence of the Upper Air Tract, the Jaws, the Teeth, the Face and Their Economic Importance to the Human Race."

These two papers were discussed by Drs. W. H. Potter, Boston; W. M. Dailey, New York City; C. A. Hawley, Columbus, Ohio; E. A Bogue, New York City, and W. S. Bryant, New York City.

A paper on "Radiography in Oral Surgery, with Demonstrations of a Focus Finder and Ray Localizer," was read by Dr. G. E. Pfahler, Philadelphia. The paper was illustrated with lantern slides. Discussed by Drs. G. V. I. Brown, Milwaukee and G. E. Pfahler, Philadelphia.

A paper on "Speech Results of Cleft Palate Operations," was read by Dr. G. V. I. Brown, Milwaukee. Discussed by Drs. Robert T. Oliver, U. S. A., West Point, N. Y., M. I. Schamberg, New York City; E. A. Bogue, New York City; V. A. Latham, Chicago, and G. V. I. Brown, Milwaukee.

Section on Cutaneous Medicine and Surgery.

TUESDAY, JUNE 4—AFTERNOON.

The meeting was called to order by the chairman, Dr. R. H. Campbell, Chicago, who then delivered the chairman's address. "Venous Angioma of Skin Showing Beginning Malignancy."

A paper on "Deformities of the Vulva from Early and Late Indurating Edema" was read by Dr. R. W. Taylor, New York City. Discussed by Drs. H. C. Baum, Syracuse, N. Y.; J. Zeisler, Chicago; W. A. Pusey, Chicago; W. S. Gotthelf, New York City, and R. W. Taylor, New York City.

A paper entitled "Blastomycosis in an Infant" was read by Dr. J. B. Kessler, Iowa City, Iowa. Discussed by Drs. W. A. Pusey, Chicago; H. C. Baum, Syracuse, N. Y.; W. T. Corlett, Cleveland; J. A. Fordyce, New York City; J. F. Schamberg, Philadelphia; M. B. Hartzell, Philadelphia, and J. B. Kessler, Iowa City, Iowa.

A paper on "Significance and Treatment of Itching" was read by Dr. L. Duncan Bulkley, New York City. Discussed by Drs. W. T. Corlett, Cleveland; G. T. Jackson, New York City, and L. D. Bulkley, New York City.

"Some Seborrhoides of the Face" was the title of a paper by Drs. M. F. Engman and W. H. Mook, St. Louis, read by Dr. Engman. Discussed by Drs. J. Zeisler, Chicago; J. F. Schamberg, Philadelphia, and W. H. Mook, St. Louis.

A paper entitled "The Salicylates in the Treatment of Lichen Planus; Some Unusual Forms of This Affection," was read by Dr. M. B. Hartzell, Philadelphia. Discussed by Drs. W. S. Gotthelf, New York City; J. Zeisler, Chicago; J. B. Kessler, Iowa City, Iowa; G. T. Jackson, New York City; R. W. Taylor, New York City; L. D. Bulkley, New York City; W. T. Corlett, Cleveland, and M. B. Hartzell, Philadelphia.

A paper was read on "Liquid Air in Dermatology; Its Indications and Limitation," by Dr. H. H. Whitehouse, New York City. Discussed by Drs. H. W. Stelwagon, Philadelphia; W. A. Pusey, Chicago; G. T. Jackson, New York City; L. D. Bulkley, New York City; J. D. Gold, Bridgeport, Conn.; L. S. Shoninger, New York City; W. S. Gotthelf, New York City, and H. H. Whitehouse, New York City.

WEDNESDAY, JUNE 5—AFTERNOON.

The chairman appointed a nominating committee of three members for the election of officers for the ensuing year.

Dr. John A. Fordyce of New York City, Secretary-General of the Sixth International Dermatological Congress, announced that the Sixth International Dermatological Congress will meet in New York City Sept. 9-14, 1907. A committee of the American Dermatological Association and of this Section of the American Medical Association extended an invitation to the International Dermatological Congress at the Berlin meeting to meet in this country in 1907, which invitation was accepted. An organization committee had been appointed, subjects selected for discussion, and prominent men from abroad secured to participate. In addition to this, they have the promise of over 60 papers, so that from a scientific standpoint, the congress promises to be a success.

The membership of the congress already numbers about 150, including about 40 members from abroad. Over $9,000 has already been collected, while more than $12,000 has been pledged to meet the expenses of the congress, the entertainment of the visiting members, etc.

Dr. George T. Jackson, the treasurer, or Dr. Fordyce will receive applications for membership and furnish further information and printed matter.

A paper on "Ten Years' Experience with the Injection Treatment of Syphilis" was read by Dr. W. S. Gotthelf, New York City. Discussed by Drs. R. W. Taylor, New York City; A. Ravogli, Cincinnati; J. Zeisler, Chicago; G. MacGowan, Los Angeles, Cal.; H. Klotz, New York City; L. E. Schmidt, Chicago; M. B. Hartzell, Philadelphia; J. F. Schamberg, Philadelphia; J. A. Fordyce, New York City; W. H. Davis, Denver; W. T. Corlett, Cleveland; L. D. Bulkley, New York City; W. S. Gotthelf, New York City.

A paper on "The Vessel Changes and Other Histologic Features of Cutaneous Syphilis" was read by Dr. J. A. Fordyce, New York City. Discussed by Drs. J. F. Schamberg, Philadelphia; W. A. Pusey, Chicago; A. Ravogli, Cincinnati; W. H. Mook, St. Louis; W. S. Gotthelf, New York City; M. B. Hartzell, Philadelphia; R. W. Taylor, New York City; C. A. Kinch, New York City, and J. A. Fordyce, New York City.

"The Differential Diagnosis of Syphilis" (illustrated by lantern slides) was the title of a paper read by Dr. W. T. Corlett, Cleveland.

A paper entitled "Lupus Erythematosus; Some Clinical and Pathologic Considerations" (demonstrated from lantern slides) was read by Dr. M. L. Heidingsfeld, Cincinnati.

A paper on "The Present Status of Phototherapy" was read by Dr. Jay F. Schamberg, Philadelphia. Discussed by Drs. Wm. S. Gotthelf, New York City; L. D. Bulkley, New York City; W. T. Corlett, Cleveland; J. F. Wallis, Norristown, Pa.; M. L. Heidingsfeld, Cincinnati; J. H. Mudgett, Philadelphia, and J. F. Schamberg, Philadelphia.

Dr. L. D. Bulkley, New York City, moved that the House of Del-

egates be requested to direct the proper authorities to send a complete program of this Section, from three to five days before the next annual meeting, to each member of the Section who has registered this year. The motion was carried.

Dr. Bulkley said that a great deal of dissatisfaction had been expressed with the present name of the Section, which was changed some years ago from that of the Section on Dermatology to that of the Section on Cutaneous Medicine and Surgery. The word "surgery" in the title misled many into the belief that the surgery was general rather than cutaneous. He therefore moved that a committee be appointed, consisting of the incoming officers of the Section and the members of the executive committee, for the purpose of corresponding with the members of this Section in order to obtain an expression of opinion as to what name they consider most advisable, and that this committee report at the next meeting of the Section. The motion was carried.

The chairman named the following nominating committee: Drs. William Baum, Chicago; John A. Fordyce, New York City, and W. T. Corlett, Cleveland.

The chairman announced that volumes of the transactions of the various sections of the last meeting of the American Medical Association were ready for distribution, and that members could receive the same by making proper application. If desired, the volumes subscribed for will be sent yearly until the order is canceled.

THURSDAY, JUNE 6—AFTERNOON.

Dr. William L. Baum, Chicago, the chairman of the nominating committee, reported as follows: Chairman, Dr. M. B. Hartzell, Philadelphia; vice-chairman, Dr. Granville MacGowan, Los Angeles; secretary, Dr. M. L. Heidingsfeld, Cincinnati; delegate, Dr. R. R. Campbell, Chicago; alternate, Dr. J. B. Kessler, Iowa City, Iowa. These officers were elected as nominated.

A paper on "Observations on Pemphigus" was read by Dr. Joseph Zeisler, Chicago. Discussed by Drs. W. T. Corlett, Cleveland; J. A. Fordyce, New York City; J. F. Schamberg, Philadelphia; J. B. Kessler, Iowa City, Iowa; L. D. Bulkley, New York City; A. Ravogli, Cincinnati, and J. Zeisler, Chicago.

A patient was exhibited by Dr. J. V. Shoemaker, Philadelphia, and the case discussed by Drs. J. Zeisler, Chicago; R. A. McDonnell, New Haven, Conn.; H. T. F. Wallhauser, Newark, N. J.; A. Ravogli, Cincinnati; J. F. Schamberg, Philadelphia; J. B. Kessler, Iowa City, Iowa; Granville MacGowan, Los Angeles; R. W. Taylor, New York City, and J. V. Shoemaker, Philadelphia.

A paper entitled "Opsonic Therapy as Applied to Skin Diseases" was read by Dr. H. R. Varney, Detroit. Discussed by Drs. J. F. Schamberg, Philadelphia; R. A. McDonnell, New Haven, Conn.; M. L. Heidingsfeld, Cincinnati; J. Zeisler, Chicago; W. H. Mook, St. Louis; M. B. Hartzell, Philadelphia, and H. R. Varney, Detroit.

A paper on "Onychomycosis" was read by Dr. A. Ravogli, Cincinnati. Discussed by Drs. J. B. Kessler, Iowa City, Iowa; G. MacGowan, Los Angeles; M. L. Heidingsfeld, Cincinnati, and A. Ravogli, Cincinnati.

"The Therapeutics of Tuberculous Lesions of the Skin" was the title of a paper read by Dr. Granville MacGowan, Los Angeles.

A paper on "Roentgen Ray Technic in Dermatology" was read by Dr. M. K. Kassabian, Philadelphia.

A paper entitled "Treatment of Acne and Chronic Eczema" was read by Dr. Russell H. Boggs, Pittsburg.

These three papers were discussed by Drs. M. B. Hartzell, Philadelphia; G. E. Pfahler, Philadelphia; C. J. Leonard, Philadelphia; J. F. Schamberg, Philadelphia; R. H. Montgomery, Youngstown; G. MacGowan, Los Angeles; M. K. Kassabian, Philadelphia, and R. H. Boggs, Pittsburg.

"The Cytology of Gonorrheal Discharges" was the title of a paper read by Dr. Robert W. Taylor, New York City. This paper was not on the program, and a motion was passed by the Section allowing it to be read.

A paper on "Report of a Series of Cases of Small Pustular Scrofulide (Dühring)," by Dr. J. Frank Wallis, Norristown, Pa., was, because of lack of time, read by title.

Dr. H. R. Varney, Detroit, announced that at the morning session of the House of Delegates he had presented the motion passed by the Section yesterday in regard to sending the members of the Section a sectional program a few days prior to the next meeting. The motion had been referred to the Committee on Section Work, and they had reported adversely on it, claiming that if this privilege were extended to one section, other sections would also claim it, and that this would entail considerable expense. It was suggested instead that the full papers be prepared and printed in time to place copies in the hands of the members beforehand.

Dr. Hartzell, the incoming chairman, thanked the members of the Section for the honor they had conferred on him.

A vote of thanks was extended to the retiring chairman, Dr. Campbell, and to the secretary, Dr. Heidingsfeld, for their zealous and efficient work on behalf of the Section.

Section on Pharmacology and Therapeutics.

TUESDAY, JUNE 4—AFTERNOON.

This Section met in Ocean Hall, at the Marlborough-Blenheim, and the chairman, Dr. H. C. Wood, Jr., Philadelphia, called the meeting to order at 2:30 p. m. The secretary read a communication from the American Pharmaceutical Association.

Dr. H. C. Wood, Jr., delivered the chairman's address, entitled "The Place of Pharmacology in Medicine."

Dr. Joseph P. Remington, Philadelphia, presented the address of chairman of delegation from American Pharmaceutical Association.

Secretary Dr. C. S. N. Hallberg, Chicago, presented his report.

Dr. O. T. Osborne, New Haven, Conn., read the report of the Committee on the United States Pharmacopeia.

Dr. Robert A. Hatcher, New York City, read a paper entitled "The United States Pharmacopeia."

The papers were discussed as a whole by Profs. J. P. Remington, Philadelphia; H. Kraemer, Philadelphia; Mr. M. I. Wilbert, Philadelphia; Drs. W. J. Robinson, New York City; W. B. Hill, Milwaukee, Wis.; O. T. Osborne, New Haven, Conn.; H. R. Slack, Atlanta, Ga.; G. F. Butler, Chicago; H. G. Piffard, New York City; J. J. Taylor, Philadelphia; C. M. Thrush, Philadelphia; C. S. N. Hallberg, Chicago; F. M. Read, Richmond, Va.; W. C. Abbott, Chicago, and R. A. Hatcher, New York City.

A motion was made by Dr. Hallberg that the Section should elect an alternate delegate. This was carried.

WEDNESDAY, JUNE 5—MORNING.

Dr. George Dock, Ann Arbor, Mich., read a paper entitled "Medicinal Treatment of Cholelithiasis." Discussed by Drs. S. Solis-Cohen, Philadelphia; E. W. Goodenough, Waterbury, Conn.; W. W. Tompkins, Charleston, W. Va.; H. H. Roberts, Lexington, Ky.; J. C. Johnson, Atlanta, Ga.; L. Amster, Atlanta, Ga.; W. J. Robinson, New York City; J. Tyson, Philadelphia; J. F. Hultgen, Chicago; T. C. Kennedy, Shelbyville, Ind.; H. E. Lewis, New York City, and G. Dock, Ann Arbor, Mich.

Dr. James Tyson, Philadelphia, read a paper entitled "The Treatment of Diabetes Mellitus." Discussed by Drs. W. J. Robinson, New York City; L. Amster, Atlanta, Ga.; G. M. Linthicum, Baltimore; G. D. Kahlo, French Lick Springs, Ind.; W. W. Tompkins, Charleston, W. Va.; J. D. Davis, Louisiana, Mo.; J. F. Hultgen, Chicago, Ill.; R. F. Ridpath, Germantown, Pa.; W. D. Robinson, Philadelphia; A. Marcy, Jr., Riverton, N. J.; H. E. Lewis, New York City; O. M. Hoyt, Philadelphia; C. S. N. Hallberg, Chicago, and Tyson, Philadelphia.

Dr. W. W. Tompkins, Charleston, W. Va., made a motion that a committee of three be appointed to nominate twelve members for the proposed Committee on Revision of the U. S. Pharmacopeia. This motion was carried.

WEDNESDAY, JUNE 5—AFTERNOON.

Dr. W. W. Tompkins, Charleston, W. Va., presented the report of the committee to nominate twelve members of the American Medical Association for the proposed Committee on the Revision of the U. S. Pharmacopeia; Dr. E. E. Hyde, Chicago; Dr. A. L. Benedict; Buffalo, N. Y.; Dr. Robert A. Fletcher, New York.; Dr. H. E. Lewis, New York; Dr. S. Solis-Cohen, Philadelphia; Dr. George Dock, Ann Arbor, Mich.; Dr. F. Forchheimer, Cincinnati; Dr. Reid Hunt, Washington, D. C.; Dr. P. M. Jones, San Francisco; Dr. O. T. Osborne, New Haven, Conn.; Dr. W. J. Robinson, New York City; Dr. W. S. Thayer, Baltimore.

Dr. W. E. Robertson, Philadelphia, read a paper entitled "A Study of the Effect of Drugs on the Coagulation of Blood." Drs. G. Morton Ilman and Harry A. Duncan, Philadelphia, assisting in the preparation of this paper. Discussed by Drs. C. B. Lowe, Philadelphia; S. Solis-Cohen, Philadelphia; O. M. Hoyt, Philadelphia; Harry A. Duncan, Philadelphia, and W. E. Robertson.

Dr. W. J. Robinson, New York City, read a paper entitled "A Study of the Bromin Compounds with Especial Reference to Strontium Bromid." Discussed by Drs. W. Stevens, New York City; J. J. Taylor, Philadelphia; W. E. Robertson, Philadelphia; W. W. Tompkins, Charleston, W. Va.; C. B., Lowe, Philadelphia, and W. J. Robinson.

Dr. George F. Butler, Chicago, read a paper entitled "Pathophysiology and Therapeutics." Discussed by Drs. R. A. Hatcher, New York City; W. E. Robertson, Philadelphia; C. S. N. Hallberg, Chicago; H. C. Wood, Jr., Philadelphia; C. B. Lowe, Philadelphia, and G. F. Butler.

By request Dr. Robert A. Hatcher, New York City, read a paper prepared by Dr. William Whitridge Williams, Cleveland, Ohio, entitled "The Effects of Hydrastis and Its Alkaloids on Blood Pressure." Discussed by Drs. H. Beates, Philadelphia; G. F. Butler, Chicago, and R. A. Hatcher, New York City.

Dr. Robert A. Hatcher, New York City, made a motion that the chairman appoint some one to call the attention of the larger sections to the exhibit of the preparations of the U. S. Pharmacopeia, National Formulary and related proprietaries.

THURSDAY, JUNE 6—MORNING.

A joint meeting was held with the Section on Medicine, Casino Hall, Steel Pier. The chairman, Dr. T. D. Coleman, Augusta, Ga., called the meeting to order at 9:15 a. m. The meeting was devoted to the consideration of a symposium on "Acute Articular Rheumatism."

Dr. Rufus I. Cole, Baltimore, read a paper entitled "The Etiology of Acute Articular Rheumatism."

Dr. Philip King Brown, San Francisco, read a paper entitled "Symptomatology and Diagnosis of Acute Articular Rheumatism."

Dr. Alexander Lambert, New York City, read a paper entitled "The Cardiac Complications of Acute Articular Rheumatism."

Dr. N. S. Davis, Chicago, read a paper entitled "Specific Treatment of Acute Articular Rheumatism or Treatment with Salicylates."

Dr. Solomon Solis-Cohen, Philadelphia, read a paper entitled "The Prophylaxis and General Management of Acute Rheumatic Fever."

These five papers were discussed by Drs. J. M. Anders, Philadelphia; A. Stengel, Philadelphia; W. Hutchinson, New York City; L. Burckhardt, Indianapolis, Ind.; J. A. Lichty, Pittsburg, Pa.; J. N. Upshur, Richmond, Va.; Nielson, Milwaukee; Gichner, Baltimore; Witherspoon, Philadelphia; G. Dock, Ann Arbor, Mich.; N. Bridge, Los Angeles, Cal.; Thayer, Baltimore; A. Jones, Buffalo, N. Y.; Richardson, Camden, N. J.; W. W. Tompkins, Charleston, W. Va.; Cole, Baltimore; Brown, San Francisco; Lambert, New york City, and S. Solis-Cohen, Philadelphia.

THURSDAY, JUNE 6—AFTERNOON.

Dr. Osborne on behalf of the nominating committee for officers for the ensuing year reported as follows: Chairman, Dr. M. F. Fussell, Philadelphia; vice-chairman, Dr. W. W. Tompkins, Charleston, W. Va.; secretary, Dr. C. S. N. Hallberg, Chicago; delegate, Dr. S. Solis-Cohen, Philadelphia; alternate delegate, Dr. Oliver T. Osborne, New Haven, Conn. The secretary was instructed to cast a ballot for the whole and the nominees were declared elected.

Dr. C. B. Lowe, Germantown, Pa., moved that the Section adjourn for 30 minutes to listen to the reading of Dr. Wiley's paper, entitled "The Connection of M.D. with Proprietary Remedies." This motion was carried and Prof. Puckner, Chicago, read the paper.

In regular session again, Mr. Martin I. Wilbert, Philadelphia, read a paper entitled "Materia Medica and Pharmacy in Hospital Practice." Discussed by Drs. W. J. Robinson, New York City; J. D. Robinson, Philadelphia; G. F. Butler, Chicago; R. A. Hatcher, New York City; C. B. Lowe, Germantown, Pa.; O. T. Osborne, New Haven, Conn.; H. R. Slack, Atlanta, Ga.

Dr. M. Clayton Thrush, Philadelphia, read a paper entitled "A Plea for a More Thorough Course in Practical Pharmacy and Prescription Dispensing in Our Medical Schools." Discussed by Dr. G. F. Butler, Chicago; Dr. C. S. Chamberlain, Cincinnati, Ohio.; Mr. W. C. Westcot, Atlantic City, N. J.; Professor Puckner, Chicago; Dr. H. C. Wood, Jr., Philadelphia; Dr. H. E. Lewis, New York City; Dr. C. S. N. Hallberg, Chicago; Mr. Henry Kraemer, Philadelphia;

Dr. W. J. Robinson, New York City; Mr. M. G. Motter, Philadelphia; Mr. M. I. Wilbert, and Dr. M. Clayton Thrush.

Dr. Robert A. Hatcher, New York City, presented the report of the committee appointed to consider the recommendations made in the secretary's report, as follows:

Resolved, That the articles of the U. S. Pharmacopeia, the National Formulary and physician's prescriptions should be exempt from the requirements of naming on the label or package the amount of the substances named in the section; alcohol, acetanilid, cocain, morphin, etc.

RELATIONS OF PHARMACISTS TO PHYSICIANS.

WHEREAS, The reformation of the materia medica and campaign for the more general acceptance of the U. S. Pharmacopeia and the National Formulary makes essential closer relations between pharmacists and physicians; and,

WHEREAS, The work of the physician may be made more safe, sure and pleasant through a higher order of pharmaceutical knowledge, experience and skill; and,

WHEREAS, The American Pharmaceutical Association is cooperating in this work, several of its members serving on the Council of Pharmacy and Chemistry in order to insure to physicians the fullest integrity and best pharmaceutical skill, asks the support of the medical profession in the efforts of its local branches to re-establish the professional practice of Pharmacy; be it.

Resolved, That the following subjects are approved as suitable for discussion by the local branches of the American Pharmaceutical Association, as having a direct and practical bearing on this question: 1. "The Status of the Prescription." 2. "The Attitude to 'Patent Medicines.'" 3. "Prescribing by Druggists." 4. "Dispensing by Doctors."

R. A. HATCHER,
H. R. SLACK,
O. T. OSBORNE.

The report was adopted.

Dr. H. R. Slack, Atlanta, Ga., made a motion, which was carried, that the chairman appoint delegates from the Section on Pharmacology and Therapeutics to attend the next meeting of the American Pharmaceutical Association in September next in New York City. The chairman to announce delegates later.

It was moved and carried that a vote of thanks be tendered to the Philadelphia branch of the American Pharmaceutical Association for the exhibit at the present meeting.

Section on Pathology and Physiology.

TUESDAY, JUNE 4—AFTERNOON.

This section met in the Sun Parlor of the Hotel Dennis, and at 2 p. m. was called to order by the chairman. Dr. Walter L. Bierring, Iowa City, Iowa.

The chairman read his address "The Need of Medical Cooperation in Laboratory Work."

Dr. M. J. Rosenau, Washington, D. C., read his paper on "An Explanation of the Seasonal Prevalence of Typhoid Fever." Discussed by Drs. D. H. Bergey, Philadelphia; A. L. Benedict, Buffalo; D. L. Edsall, Philadelphia, and M. J. Rosenau. This was followed by the paper on "The Estimation of the Dried Weight of the Total Bacteria in the Feces, and Its Clinical Significance," by Dr. J. Dutton Steele, Philadelphia. Discussed by Dr. Gage.

A paper on "Further Observations Concerning Metabolism in Acute Lukemia and Purpura Hemorrhagica" was read by David L. Edsall. Discussed by Prof. J. George Adami, Montreal; Drs. S. J. Meltzer, New York City; D. W. Bergey, Philadelphia; M. J. Rosenau, Washington, D. C., and D. L. Edsall.

The paper of Dr. Torald Sollmann, Cleveland, Ohio, on "Recent Work on the Mechanism of Urine Formation" was read by the secretary, Dr. Walter B. Cannon, Boston.

The chairman appointed on the nominating committee Drs. F. B. Wynn, Indianapolis, Hirschfelder, Baltimore, and H. A. Christian, Boston.

WEDNESDAY, JUNE 5—MORNING.

The Section met in joint session with the Sections on Practice of Medicine and Surgery and Anatomy, in the Music Hall, Steel Pier, and the symposium on Exophthalmic Goiter was read and discussed. For the proceedings, see the minutes of the Section on Surgery and Anatomy, above.

WEDNESDAY, JUNE 5—AFTERNOON.

Dr. Joseph McFarland, Philadelphia, read a paper on "Specific Nature of Opsonins" and demonstrated the "Nephelometer" in making opsonic estimations.

A paper on "Value of Opsonic Index as a Guide to Treatment and Diagnosis was read by Dr. William H. Park, New York City.

The two papers on opsonins were then discussed by Dr. D. H. Bergey, Philadelphia; Prof. J. G. Adami, Montreal; Drs. Frank Smithies, Ann Arbor; M. P. Ravenel, Philadelphia; Potter, New York City; E. M. Houghton, Detroit, and W. H. Park.

The paper on "The Occurrence of Typhoid Bacilli in the Stools of Typhoid Patients, with a Discussion of the Pathogenesis of Typhoid Fever," by Drs. J. H. Pratt, F. W. Peabody and A. D. Long, Boston, was read by Dr. J. H. Pratt. Discussed by Drs. W. H. Park, New York City; A. L. Benedict, Buffalo; H. G. Beck, Baltimore and J. H. Pratt.

The two papers of Dr. H. M. Adler, Boston, on "The Determination of the Alkalinity of the Blood" and "A New Indicator for Free Mineral Acids" were read by the secretary.

The paper of Drs. Lafayette B. Mendel and Ernest W. Brown, New Haven, Conn., on "The Rate of Elimination of Uric Acid in Man," was read, and discussed by Drs. D. W. Edsall, Philadelphia, and Fenton B. Turck, Chicago.

"Experimental and Clinical Observation on Chronic Valvular Disease in the Dog," was the title of a paper read by Dr. Harvey W. Cushing, Baltimore. Discussed by Dr. H. A. Christian, Boston; Prof. J. G. Adami, Montreal; Drs. J. McI. Phillips, Columbus, Ohio, and H. W. Cushing.

THURSDAY, JUNE 6—MORNING.

A paper on "The Experimental Production of Epithelliation Proliferation" was read by Dr. Guthrie McConnell, Baltimore.

A paper with the same title was read by Dr. H. F. Hemholtz, Baltimore.

"Experimental Transplantation of Tumors in Dogs" was the title of a paper read by Dr. S. P. Beebe, New York City.

A paper on "The Treatment of Experimental Tumors in Dogs with Bacterial Toxins," was read by Dr. S. P. Beebe and Martha Tracy, New York. Discussed by Prof. J. G. Adami, Montreal; Drs. D. H. Bergey, Philadelphia; William B. Coley, New York City; Guthrie McConnell, Baltimore; S. P. Beebe, and Martha Tracy.

A paper entitled "Further Studies of Adenomyoma of the Uterus" was read by Dr. Thomas S. Cullen, Baltimore. Discussed by Drs. Black, Los Angeles, and T. S. Cullen.

A paper on "Diffuse Carcinoma of the Stomach, Esophagus and Duodenum," was read by Dr. Henry A. Christian, Boston. Discussed by Drs. A. D. Hirschfelder, Baltimore, and H. A. Christian.

A paper on "Further Observations on Peptic Ulcer" was read by Dr. Fenton B. Turck, Chicago. Discussed by Dr. M. J. Rosenau, Washington, D. C.

A paper on "Congulation Necrosis," was read by Dr. D. H Bergey, Philadelphia. Discussed by Dr. Claude A. Smith, Atlanta, Ga.

"An Epidemic Pneumococcic Catarrhal Disease," (a) Clinical Study, by Dr. H. G. Beck, Baltimore; (b), Bacteriologic Study, by Dr. William Royal Stokes, Baltimore.

A paper on "Further Study on the Causative Factor in the Production of Dermatitis of Ground Itch (Uncinariasis)" was read by Dr. Claude A. Smith, Atlanta, Ga. Discussed by Prof. J. G. Adami, Montreal and Dr. Smith.

Dr. A. D. Hirschfelder, Baltimore, chairman of the nominating committee, reported the following nominations for officers of the Section for the next year: Chairman, Dr. Walter B. Cannon, Boston, Secretary, Dr. M. J. Rosenau, Washington, D. C.; delegate, Dr. W. M. L. Coplin, Philadelphia. These were elected.

FRIDAY, JUNE 7—MORNING.

A paper on "The movements of the Esophagus After Bilateral Vagotomy" was read by Dr. W. B. Cannon, Boston. Discussed by Drs. S. J. Meltzer, New York City; John C. Hemmeter, Baltimore, and W. B. Cannon.

A paper entitled "An Experimental Study Concerning a Probable Internal Secretion of the Salivary Glands" was read by Dr. John C. Hemmeter, Baltimore. Discussed by Winfield S. Hall, Chicago; S. P. Beebe, New York; W. B. Cannon, Boston, and J. C. Hemmeter.

A paper on "Experiments with the Proteolytic Ferments," by Drs. Joseph Saller and C. B. Farr, Philadelphia, was read. Discussed by Drs. J. C. Hemmeter, Baltimore; W. S. Hall, Chicago and Joseph Saller.

A paper on "Simultaneous Sphygmomanometric Pressures as Modified by Postures," by Drs. Winfield Scott Hall and A. H. Sanford, Chicago, was read. Discussed by Drs. J. C. Hemmeter, Joseph Saller and W. S. Hall.

W. S. Hall, Chicago, member of the House of Delegates, reported the action taken by that body on by-laws concerning the Section on Physiology and Pathology, and concerning associate members and invited guests.

Chairman Bierring thanked the society for courtesies shown him.

Registration at Atlantic City.

The list of members of the American Medical Association who registered at Atlantic City will be published July 6. Because of the index in the issue of next week it is impossible to find room for the names June 29.

Dr. Charles J. Kipp a Member of the Judicial Council.

Through an oversight the names of only four members of the Judicial Council appeared in the Official Minutes in last week's issue. Dr. Charles J. Kipp, Newark, N. J., is the fifth member of that council.

Society Proceedings

COMING MEETINGS.

Medical Society of New Jersey, Long Branch, June 25-27.
Oregon State Medical Association, Seaside, July 12-13.
Minnesota State Medical Association, Duluth, August 13.
Wisconsin State Medical Society, Superior, August 20-22.
Ohio State Medical Association, Cedar Point, August 28.

INDIANA STATE MEDICAL ASSOCIATION.

Fifty-eighth Annual Meeting, held in Indianapolis, May 22-24, 1907,

The President, DR. GEORGE J. COOK, Indianapolis, in the Chair.

Officers Elected.

The following officers were elected to serve during the ensuing year: President, Dr. D. C. Peyton, Jeffersonville; vice-presidents, Drs. W. H. Stemm, North Vernon; A. F. Knoefel, Linton and George R. Green, Muncie; secretary, Dr. F. C. Heath, Indianapolis; treasurer, Dr. A. E. Bulson, Jr., Fort Wayne.

Delegates to the American Medical Association, Drs. W. N. Wishard, Indianapolis; L. L. Whiteside, Franklin, and J. T. Dickes, Portland. Councilors, Drs. W. J. Leach, New Albany; J. Weinstein, Terre Haute; D. W. Stevenson, Richmond; G. Rowland, Covington, and A. E. Bulson, Jr., Fort Wayne.

The next meeting will be at French Lick, May 23-25, 1908.

V 19

DR. GEORGE J. COOK, Indianapolis, in his address as president, discussed briefly the progress of medical matters in the state and nation during the year.

Opsonins and Vaccine Therapy.

DR. RHAMEY and WEAVER, Fort Wayne, and DRS. REED and THURSTON, Indianapolis, discussed the theoretical and practical sides of these questions, and presented reports of cases in which gratifying results were obtained from vaccine therapy.

DR. WEBB, Colorado Springs, believes that the opsonic theory is a very valuable one in spite of the fact that the estimation of the opsonic index is sometimes liable to lead the observer into error.

Urinary Casts.

DR. ROBERT HESSLER, Logansport, describes very fully the differences, both chemical and physical, of casts as they are found in the various stages and forms of kidney disease.

Tuberculosis.

The first evening session was devoted to the discussion of the subject of tuberculosis, the lay public having been invited to be present at the meeting.

DR. JONAS STEWART, Anderson, discussed "The History of Tuberculosis;" DR. AMOS CARTER, Plainfield, "The Etiology and Treatment of Tuberculosis;" DR. F. A. TUCKER, Noblesville, "The Home Treatment," and DR. J. C. BLOSSOM, Mount Summit, "The Out-Door Treatment of Tuberculosis." The subject was very fully discussed by Drs. McCaskey, Wynn, Potter and Hurty.

Narcotics and Stimulants.

DR. J. R. MAUK, Cambridge City, discussed these agents fully and condemned very strongly the use of tobacco in any form.

Hyperemia as a Remedy.

DR. LOUIS BURCKHARDT, Indianapolis, reported a number of cases, in which induced hyperemia had been used successfully in the treatment. He made use of the constriction bandage, dry heat, and the suction apparatus.

Infant Feeding.

DR. E. N. CONRAD, Anderson, advocated the proper dilution of cow's milk as the best method of artificial feeding of infants.

DR. G. B. JACKSON, Indianapolis advocated the calorimetric principles of infant feeding, and exhibited charts and tables showing the proper percentages and food values.

Typhoid.

DR. MONTGOMERY, South Bend, took a very optimistic view of the value of the antitoxic treatment of typhoid fever, and of the sterilization of the alimentary tract in the disease.

Antitoxin in Diphtheria.

DRS. J. A. LITTLE, Logansport, and T. V. KEENE, Indianapolis, emphasized the importance of administering large doses of antitoxin in diphtheria, and cited a number of case reports which sustained their contention.

Eyestrain.

DR. W. J. LEACH, New Albany, presented a very full discussion of the question of eyestrain as a cause of various neuroses and functional disorders, and urged that the profession ought to keep in mind the fact that many obscure conditions may be dispelled by advising the patient to wear glasses.

The discussion on this paper was very lively and those who took part in it were agreed that by drawing attention to the effects of eyestrain on the human economy, most valuable work is being done because the profession is being stirred up on a subject that has been ignored for a long time.

Spastic Diplegia.

DRS. F. F. HUTCHINS and H. R. ALLEN, Indianapolis, discussed the pathology and treatment of this condition.

Blastomycosis.

DR. A. W. BRAYTON, Indianapolis, reported six cases of blastomycosis.

Gallstones and Cholecystitis.

Papers were read on these topics by DRS. H. O. PANTZER, Indianapolis, and T. C. KENNEDY, Shelbyville. The trend of the discussion on these papers was decidedly against relying on ineffective medication, when surgical intervention was indicated, because no medicine has yet been found that will dissolve gallstones.

Secretary's Report.

The secretary reported a gain in membership of 100, the membership of the association now being 2,297.

Insurance Examination Fees.

A resolution was passed in the House of Delegates insisting on a $5.00 fee for insurance examinations in all cases where an analysis of the urine must be made.

Other Papers Read.

The following papers were also read:

"Influenza," by Drs. Dorsey and Earp, Indianapolis; "Estivo Autumnal Fever," by Dr. G. D. Marshall, Young America; "Heart-block," by Drs. J. A. McDonald and A. C. Kimberlin, Indianapolis; "What Do We Mean by Catarrh?" by Dr. G. A. Whitledge, Anderson; "Etiology and Treatment of Coughing," by Dr. G. W. Spohn, Elkhart; "The Cataract Operation," by Dr. F. C. Heath, Indianapolis; "The Use and Abuse of Obstetric Forceps," by Dr. G. T. McCoy, Columbus; "Puerperal Infection," by Dr. C. C. Crum, Jeffersonville; "Puerperal Eclampsia," by Dr. A. Hamilton, Fort Wayne; "Tubercular Peritonitis," by Dr. C. L. Wright, Huntington; "Operative Treatment of Hypertrophied Prostate," by Dr. F. R. Charlton, Indianapolis; "Intracranial Lesions of Otitic Origin," by Dr. J. J. Kyle, Indianapolis; "Extrauterine Pregnancy," by Dr. L. G. Bowers, Richmond; "Necrosis of Tibia," by Dr. G. E. Fulton, Bluffton; "Rudimentary Organs," by Dr. A. G. Pohlman, Bloomington; "Value of Bismuth Skiagrams in Study of Gastroptosis and Enteroptosis," by Drs. A. R. Graham and A. M. Cole, Indianapolis; "Hypertrophic Stenosis of Pylorus in Infants," by Dr. O. N. Torian, Indianapolis; "Rheumatism," by Dr. F. J. Walter, Kramer; "The Physician of To-day," by Dr. N. A. Kremer, Madison; "A Year's Experience at French Lick," by Dr. G. D. Kahlo, French Lick.

ARKANSAS MEDICAL SOCIETY.

Thirty-second Annual Meeting, held at Little Rock, May 14-17, 1907.

The President, DR. C. TRAVIS DRENNEN, in the Chair.

Officers Elected.

The following officers were elected: President, Dr. C. C. Stephenson, Little Rock; vice-presidents, Drs. M. Fink, Helena, J. S. Butler, Sheridan, and C. D. Stevens, Magnolia; secretary, Dr. Morgan Smith, Little Rock; treasurer, Dr. J. W. Scales, Pine Bluff (re-elected); delegates to American Medical Association, Dr. E. K. Williams, Arkadelphia, one year; Dr. Adam Guthrie, Prescott, two years; alternates, Dr. William Crutcher, Pine Bluff, one year; Dr. C. E. Hurley, Bentonville, two years; second alternates, Dr. H. A. Longino, Magnolia, one year; Dr. J. W. Meek, Camden, two years. Councilors—First district, Dr. J. E. Hughes, Walnut Ridge, two years; second district, Dr. J. M. Jelks, Searcy, one year; third district, Dr. W. H. Deaderick, Marianna, two years; fourth district, Dr. B. D. Luck, Pine Bluff, one year; fifth district, Dr. J. T. Henry, Eagle Mills, two years; sixth district, Dr. R. H. T. Mann, Texarkana, one year; seventh district, Dr. J. C. Wallace, Arkadelphia, two years; eighth district, Dr. J. S. Westerfield, Conway, one year; ninth district, Dr. Sam G. Daniels, Marshall, two years; tenth district, Dr. C. E. Hurley, Bentonville, one year.

The 1908 meeting will be held in Little Rock.

President's Address.

DR. C. TRAVIS DRENNEN urged the enrollment in the society of every reputable physician in the state. He believes that objectionable practitioners should be taken care of by the Board of Health, as in California, thus giving the board increased power. He deplored the fact that the legislature neglected to appropriate anything for the Board of Health as an emergency fund in case of epidemics, and called attention to the need of proper medical legislation to restrict the sale of quack remedies. He referred especially to the inadequate facilities for allowing the public to enjoy the privileges of the hot water supply at Hot Springs, which, though the property of the government and of the whole people, is controlled by individuals and a spirit of commercialism prevails. The superintendent, in addition to his other duties, has charge of the

bath houses. He is not a doctor and the appointment is a political one. The result is the invalid class do not receive half the consideration at the hands of the government that Mr. Roosevelt's horses do! He had appointed Dr. G. C. Greenway, Dr. Howard P. Collings and Dr. T. E. Holland, all of Hot Springs, together with the incoming president, a committee to confer with the President of the United States, the President of the American Medical Association, and the Chairman of the Committee on Legislation of the American Medical Association, with a view to amelioration of conditions, and the appointment of a commission to investigate and make suitable recommendations to the Secretary of the Interior to correct the flagrant abuses existing and inaugurate such reforms as may seem expedient. He commended the work of the state journal.

State Medicine and Public Hygiene.

DR. W. P. ILLING, Little Rock, called attention to the expansion of industries, the increase in population and activities, necessitating the adoption of prophylactic measures, and the education of the laity in hygienic matters. Pure air, pure water, pure food, sanitation and sewerage must be secured. The Board of Health should display activity; schools should adopt modified curriculum for pupils of defective vision or feeble in vitality; hours should be arranged to admit of frequent recesses; eyes of all school children should be examined for trachoma before admission; school rooms should be ventilated properly and ample light arranged for; tuberculosis should be guarded against by all proper means and precautions taken in advance of contagious diseases current or probable. He favored the establishment of an inebriate asylum and also referred to the crowded condition of the State Hospital for Nervous Diseases, and made a plea for accurate records of vital statistics. He urged that doctors become active factors in politics, and commended the policy outlined and advocated by Dr. Charles A. L. Reed, Cincinnati, Chairman of the Committee on Legislation, American Medical Association. He urged that the councilors formulate some plan for educating the young in matters of sexual hygiene, and referred to the action taken by the Ottawa County (Ill.) Medical Society. Sexual hygiene and physiologic functions should be gently touched on in all schools for young women. He referred to the good work resulting from the sentiment set in motion by the recent lectures of Dr. J. N. McCormack throughout the state, and advocated the formation of a vigilance committee, such as that invoked by the Kentucky State Board of Health, in its recent circular to the profession in that state, to rid Arkansas of her incubus of quacks and abortionists.

Organized Medicine; Its Value to the Public and the Profession.

DR. JOHN A. WYETH, New York City, described the inspiration, progress and high ideals of medical organization, advocated a higher standard of qualifications and preliminary education for candidates for medical honors, and urged that some means be devised to stimulate the ambition and arouse the energies of medical men to a higher state of intellectual activity and scientific inquiry. He alluded to the great importance and necessity of harmony and conservatism, and called attention to the great and far-reaching results achieved by the reconciliation of warring factions in the Empire state, culminating in the welding of the 10,000 practitioners of the state into one harmonious body, of whom 65 per cent. were, on Dec. 24, 1906, accredited as members of the reorganized society. He cited as a result of the wise policy set in motion at St. Paul in 1901, when the American Medical Association membership was 9,840, that in January, 1907, the enrollment was 26,550. In 1901 THE JOURNAL of the American Medical Association printed 18,840 copies; the circulation is now 50,000, having as a conservative estimate 60,000 readers within our borders.

In a spirit of liberality, which is always progressive, medical organization welcomes to its ranks any lawful practitioner, who is of good reputation and who does not attempt to practice any special system of medicine, and who receives the endorsement of the local county society. In Iowa, prior to reorganization, there were at no time over 500 members; there now are 1,842, and every county in the state is organized. When the Minnesota State Medical Society was organized in 1903 they had 400 members; they now have 1,162, with a local society in every county.

Every county in Alabama has a local society, and in three counties where there are sixty or more physicians, every practitioner is a member; and in the state, where there are 1,500 registered legal practitioners, 1,067 belong to the state organization.

Arkansas, with its 75 counties, has eleven unorganized counties, and a state organization of 1,000 members. Of the 3,700 doctors within its borders 500 are ineligible, leaving 2,200 not enrolled, who are classed as regular practitioners. This proportion, the speaker declared, was too large, and he believed that within the near future a large number of those remaining outside would be induced to join hands with their brethren and work together for the common good. He enumerated something like 30,000 irregular practitioners in the United States at this time, so deficient morally and professionally that they are a menace to the communities infested by them. There are medical colleges not up to our standard of requirements, and there is much for medical organization to do in educating the laity regarding sanitation, sewerage and conforming to health laws, feeding and housing our population in dense centers, control of epidemics, and in facing the vital problems which confront us.

The value of medical organization is the influence it exerts on the body politic, and through this medium the proper legislation needed to better conditions should be secured; and we can only do this by intelligent cooperation and by the sacrifice of much of our material interests to the public good. Organized medicine should take more note of politics. Representative men should be sent to state and national legislatures. We would do well in our efforts for the good of mankind to emulate the noble example of that great physician, great scientist, great philosopher, and withal the great politician, the immortal Virchow.

Council on Pharmacy and Chemistry.

DR. C. S. N. HALLBERG, Chicago, member of the Council on Pharmacy and Chemistry of the American Medical Association, discussed the much neglected U. S. Pharmacopeia and National Formulary, explained the mission of the Council on Pharmacy and Chemistry, the scope of its work and the satisfactory results achieved in the analysis of proprietaries, and enlarged on the laxity of manufacturers in making changes in formulæ without announcing same, and showed what the council has done to safeguard the public from the sale of nostrums and fraudulent preparations.

Placenta Prævia Centralis.

DR. W. H. MILLER, Little Rock, discussed the palliation of after-effect on the mother. To lessen hemorrhage, he advocated ligating cord and tamponing the cervix and vagina for twelve hours. Uterine contraction is stimulated by large doses of quinin and ergot, if the os is not sufficiently dilated within twenty-four to thirty-six hours after ligating the cord. He cited two cases treated in this manner where the loss of blood was very slight. While the treatment might be applied to other forms, the author wished to be understood in this instance and referring strictly to placenta prævia centralis.

DISCUSSION.

DR. M. S. DIBRELL, Van Buren, agreed with Dr. Miller that the uterus should be emptied as soon as diagnosis is made.

DR. YOUNG, Springdale, made a plea for life of babe, and suggested Cesarean section whenever feasible; but Dr. Dibrell called his attention to the difficulty attending this in rural districts, where the nearest practitioner might be miles away and the only assistant an old negro "mammy," with the only facilities such as are afforded by the ordinary log cabin.

DR. CANFIELD, Siloam Springs, advocated saving the baby and taking care of the mother. He cited statistics to show that this had been possible in about 50 per cent. of cases, as reported by an eminent German physician.

Address in Surgery.

DR. W. A. SNODGRASS deplored the tendency to specialize and believed best results would be attained by thorough cooperation between surgeon and pathologist, and that the practitioner should endeavor to secure as extended knowledge of all branches as possible in order to attain best results.

Fracture of Spine.

DR. C. J. MARCH, Fordyce, made a further report on a case reported in 1905. Three years and four months after accident the patient is walking, assisted by a cane, drives a team and does light farm work. There is still slight paralysis of the extensor muscles of the left thigh, but he is steadily gaining control of them. Sexual vigor is restored.

Papers Read.

Many interesting papers were read at the meeting, among these the following:

"Cystic Tumor," by Dr. W. T. Rowland, Arkadelphia; "Anesthesia," by Dr. C. P. Merlweather, Little Rock; "Gall Bladder Diseases," by Dr. J. P. Runyon, Little Rock; "Empyema," by Dr. E. K. Williams, West Arkadelphia; "Amputation of Leg Under Local Anesthesia," by Dr. R. C. Dorr, Batesville; "Direct Bronchoscopy and Esophagoscopy," by Dr. R. H. T. Mann, Texarkana; "Adhesions Following Abdominal Operations," by Dr. O. Gray; Little Rock; "Umbilical Hernia," by Dr. T. F. Kittrell, Texarkana; "Bi-murlate of Quinin in Urea as a Local Anesthetic," by Dr. H. Thibault, Scott; "Surgery of the Rectum," by Dr. A. E. Fox, Helena; "Inguinal Hernia," by Dr. M. E. Willis, Newport; "Treatment of Gonorrheal Infection of Prostate by Use of Acetylene Gas," by Dr. A. U. Williams, Hot Springs; "Infant Feeding by Dr. C. K. Caruthers, "Amebiasis," by Dr. F. A. Jelks, Memphis; "Medical Legislation," by Dr. C. R. Shinault, Little Rock; "Problem of Nutrition in Gastric Atony," Dr. F. B. Turck, Chicago.

The meeting closed with a banquet tendered the society by the Little Rock Board of Trade, at which Mr. R. E. Wait presided.

AMERICAN ACADEMY OF MEDICINE.

Fifty-Second Annual Meeting, held at Atlantic City, June 1 and 3, 1907.

(*Continued from page 2069.*)

Social Education of the Child.

DR. A. L. BENEDICT, Buffalo, N. Y., believes that every boy and girl, not physically, mentally or morally defective, should attend the public school. He does not advise higher education unless the individual is liable to need it, and points out the economic disadvantages of too high education for too great a proportion of the population. The necessity was pointed out of recognizing to some degree what are called class distinctions. The following were some items mentioned as important in the social education of the child: To avoid jealousies; to try to change oneself rather than the world; not to make principles out of prejudices; to greet and entertain all acquaintances as if it were a pleasure, or else to avoid them altogether; to eliminate from one's acquaintance those who are low, selfish, demoralizing or unreasonably troublesome; to repay every debt, social as well as financial; to realize that being square is an important item in social success.

Superiority of the Playground to the Schoolroom.

DR. WOODS HUTCHINSON, New York, announced that the parts played by the natural growth tendencies of the child and education have been much like those of the infant foods and the milk in which they are administered: The milk does the work, the food gets the credit. So it is with the playground and the schoolroom. The superiority of the playground over the schoolroom in the physical development of the child he thought needed little proof. The effect of the playground on the mental development of the child, it was thought, would not be so readily conceded; but remembering that his engine of thought, his brain, has at five years of age reached four-fifths, and at seven years of age reached seven-eighths, of its total bulk before formal education has been applied at all, it was readily seen how little the latter was absolutely necessary. Children kept out of school for half the day, make better progress in their studies, to say nothing of the improved physical and mental condition. That the child would never learn the classics in the school of play was regarded as one of its chief advantages, for these the author said represent a relic of barbarism, of caste education, of culture separating its possessor from the rest of his kind, the aim of which was selfish in self culture and personal exaltation. The aim of modern scientific education was said to be not culture, but service, effectiveness for helpfulness to others.

The playground was claimed to be equally effective on the moral side by checking and controlling the child's impulses and interests through contact with those of his fellows. The best morality in the world to-day, it is said, is to be acquired on the playground. This would not include the Christian graces, which again, was considered an advantage of the method. Charity, faith, hope, forbearance, humility, long suffering, Dr. Hutchinson regards as the virtues of the slave, or of the woman of antiquity who has neither the power nor the courage to seek to remedy present conditions. To-day is needed the morality of the men, yes, of the master. Charity in men, he claims is not a virtue, but a vice, demoralizing to the man who gives it; degrading to him who accepts. Justice and fearlessness rather than charity were said to be demanded by the new code.

DISCUSSION.

DR. WINFIELD S. HALL, Chicago, said that he had commenced his education in the little red school house, that he was a friend of this same school house, but not a friend of the kind of education taught in such a school thirty or forty years ago. Many of the principles so forcibly expressed by Dr. Hutchinson he thought were already recognized by educators to-day. He recalled the case of a girl of fourteen brought up on the plains who had shown remarkable development after being in school one year. This increased ability to study was also shown in the boys from farms able to attend school only three months of the year. He believes, however, that even in the playground children should have something on which to rivet their attention as an aid to their development.

DR. J. W. GROSVENOR, Buffalo, agreed to some extent with Dr. Hutchinson, but was entirely opposed to his thought that the child should move along from birth according to his own sweet will. With reference to the difference in mental and moral characteristics of the child he believes in heredity, and for this reason education should be largely individual. Mental training should be carried on to a certain extent by parent and teacher. While the playground is an estimable place for physical development, even the play should be superintended by an experienced person. The study of the classics he regarded of advantage in the training of the mind, especially of the memory. He agreed heartily in Dr. Hutchinson's idea that education should be progressive, and that too much time had been devoted to studies in the school room.

DR. S. A. KNOPF, New York, thought a child should not enter school until seven or eight years of age, and that the first few years should be made up of half or three-quarters play, believing that much could be done out of doors for the physical, moral and mental development of the child rather than within four walls. Some lessons in singing and recitations might with advantage be given out of doors. Referring to the training of German soldiers he said they were allowed to sing while marching, thus being developed and stimulated. The question of securing playgrounds in large cities offers a difficult problem, and he thought physicians should work for the establishing of roof gardens to school houses.

DR. ERNEST B. HOAG, Pasadena, spoke of the admirable results in education obtained at the theosophists' colony at Point Loma, California. The children are not in school more than two hours a day. They are divided into groups, each group having a teacher. Their play is so superintended as to be instructive. Hygiene is taught by making it a part of their life.

DR. EMMA B. CULBERTSON, Boston, agreed with Dr. Hutchinson in protesting against the fadism of the modern schools feeling they were going to great extremes. She thought the great trouble before the public schools lay in the overindulgent method of the kindergarten. To her mind, a kindergarten

child was a child spoiled to study. She felt strongly that the study of Latin is a necessary foundation for the study of all other languages and a necessity for an accurate application of language to the expression of ideas.

DR. M. G. MOTTER, Washington, D. C., thought the study of the classics an absolute necessity in the preliminary training of physicians. In the present day system of public school education he feels there is too much instruction and not enough education.

DR. LEARTUS CONNOR, Detroit, spoke in defense of the study of Latin and Greek.

DR. EDWARD JACKSON, Denver, said that the great supremacy of the playground over the school room lay in the great value of spontaneous action on the part of the child. Illustrative of this he contrasted spontaneous muscular movement to movement in obedience to external influence. There might be, however, schools and teachers capable of giving all the advantage of that spontaneous effort by which the child is benefited in the playground.

DR. THOMAS D. DAVIS, Pittsburg, took exception to Dr. Jackson's idea that children should be educated according to their natural bent, believing that if they were trained in the line of least resistance they would be narrow minded.

DR. DONLY C. HAWLEY, Burlington, Vt., thought it true that to-day children are educated too much—not too well. He believes it better for the child to enter school later, probably at ten years, and thinks the time will come when half day sessions will only be held. Those not taking up a professional life, he believes, should not remain in school so many years as is the present custom. He does not think all children should study the classics, but agrees with Dr. Culbertson that such study is of advantage in bringing the scholar in touch with the best thoughts of the best minds. Mathematics should be especially learned by the boy or girl who does not like it because such a child has not a logical mind and will thus be developed in this trend of thought. He believes the playground to be an important part of the child's education in bringing him in touch with Nature and with his kind, but he does not believe in the extreme degree of the principle as presented by the author, feeling rather that it is a most valuable accessory to the school.

The Soldier as a Total Abstainer from Alcoholic Beverages.

DR. J. W. GROSVENOR, Buffalo, outlined the soldier's work, dwelling on what the soldier ought to be and on his needs. He should be a high type of man physically, mentally and morally. Patriotism should stand out in all his military career. Reference was made to the soldier's clothing, to his recreation and amusement, and to his pay which should be adequate to furnish him largely with the comforts and conveniences which should be his in civil life, together with a pension for disability or old age. To the question of the need of the soldier for alcoholic beverages it was stated that science and experience give an emphatic negative. All scientists who have studied the qualities of alcohol and its effects on the human system declare in unequivocal terms that it has no utility in the development of the health of the human organism. Professors Kraepelin and Kurz have shown that one ounce of alcohol diminishes the acuteness of all the special senses; sight, hearing, touch, taste and smell and also retards the mental processes of reason, judgment or sense of propriety and memory. The experiments of Lord Roberts prove the same effect. Equally convincing are the arguments shown against the therapeutic value of alcohol to the soldier. N. S. Davis Sr., is quoted as saying that "step by step the progress of science has nullified every theory on which the physician administered alcohol." The writer is confident that not until total abstinence from alcoholic beverages has become the controlling rule in all departments of the army will there exist that freedom from drunkenness, desertion, crime, vicious habits, sickness, and inefficiency which should characterize the defenders of a republic whose rulers are its citizens, and who have a right to demand from the soldiers the highest efficiency and patriotic devotion.

DR. JAMES EVELYN PILCHER, Carlisle, Pa., agreed with the author, asserting that there is absolutely no question, other things being equal, that the soldier who is a total abstainer is infinitely more efficient than is the soldier who is in the habit of taking alcoholic stimulants. He paid a tribute to the American soldiers, the great majority of whom he said are above criticism in their general conduct. Among officers the number of total abstainers is very large.

DR. WINFIELD S. HALL, Chicago, remarked that the statement concerning the small number of army officers who drink heavily is in harmony with the decrease in drinking among the other professions. In times past it had not been an uncommon thing for the family physician to be a heavy drinker and still maintain his position in the profession. The education of the public and of the profession at the present day, however, will not tolerate this.

DR. JOHN CHASE, Denver, referred to the great difficulty encountered by the man desiring to enlist in the National Guard of Colorado if he were a user of alcohol. The utmost care was taken to exclude such men and the result was shown in the great enduring power of the guards, the men having been, at times, on duty 72 hours without sleep. It has been found that the men do better by drinking tea than alcohol.

DR. LEARTUS CONNOR, Detroit, believed that most men drank when they desired to forget some unpleasant experience or condition and that the conditions of life of the United States soldier tended to make him seek this forgetfulness. If the Army were made a desirable place in which a man could serve his country he did not believe drinking would be indulged in largely.

DR. JAMES A. SPALDING, Portland, Maine, spoke of the effect of the Sturgis law in compelling the sheriff to enforce the prohibition law, the result of which was to bring about the pocket peddling of liquor. On one occasion an officer had found thirty per cent. of his men in the hospital from the cocain habit. They had gone over the town and not being able to get a little beer and because they did not want to drink bad rum they had used cocain. He questioned whether in taking away alcohol good would be done if cocain were substituted.

DR. WOODS HUTCHINSON, New York, was in accord with much of the paper but thought one point to be challenged was the statement that all medical men and scientists were in accord on the uselessness of alcohol in health and disease, believing that the facts in the case do not support the statement. A point raised by Dr. Hutchinson was: why do men drink? The normal man, he claimed, does not take alcohol as a food but as a means of enjoyment. So long as conditions are unfavorable, so long as men are subjected to injustice, are placed under conditions of hardship, so long, Dr. Hutchinson believes, they will continue to resort to alcohol. This he thought was the aspect which Dr. Grosvenor omitted.

(To be continued.)

AMERICAN ASSOCIATION OF MEDICAL EXAMINERS.

Eighth Annual Meeting, held in Atlantic City, June 3-4, 1907.

This meeting is considered the most important one held by this association for a number of years. The attendance was especially gratifying, and included medical directors of many prominent companies, who showed the interest that is being taken in this subject by life insurance companies in general. The discussion was spirited and entered into by a majority of the members.

Among the important papers read were the following "Statistics Relating to the Twelve Most Fatal Diseases in Regard to Life Insurance," by Frederick L. Hoffman, Esq., statistician, Newark, N. J.; "Diseases of the Female Pelvic Organs in Relation to Life Insurance," by Dr. F. C. Hammond, Philadelphia; "The Relation of Diseases of the Ear to Life Expectancy," by Dr. John F. Barnhill, Indianapolis, and "The External Appearance of the Eye in Relation to Life Expectancy," by Dr. Richard Kalish, New York.

The second session of the association was devoted to a symposium on "Diseases of the Chest Organs in Relation to Life Insurance," and valuable papers by Drs. Clarence L. Wheaton, Chicago; S. A. Knopf, New York; T. Millman, Toronto, and T. D. Crothers, Hartford, were read and discussed. The association was addressed on "The Duty and Action of Physicians

when Examining Accident Cases," by Dr. Kingman B. Page and George H. Bruce, Esq., of New York.

The Examination Fee—Five Dollars.

The question as to the amount of fees that should be allowed by life insurance companies for the proper examination of an applicant was considered and it was the unanimous opinion of all examiners present that life insurance companies should pay a minimum fee of $5 for each examination. This subject has been discussed at previous meetings of the association and the same action has always been taken.

National Board of Health Favored.

A resolution was adopted in favor of a department of health to be established by the federal government, with a physician as secretary, and ranking in authority with the other members of the President's Cabinet.

The next annual meeting will be held at Chicago, at the time of the American Medical Association session.

Officers Elected.

The following officers were elected for the ensuing year: President, C. H. Harbaugh, Philadelphia; vice-presidents, Liston H. Montgomery, Chicago; Frank E. Allard, Boston; B. J. O'Connor, Louisville, Ky.; E. O. Kinne, Syracuse, N. Y., and T. Millman, Toronto, Can.; secretary-treasurer, John Guy Monihan, New York.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, held at Washington, D. C., May 7-9, 1907

(Concluded from page 2070.)

SYMPOSIUM ON END RESULTS OF OPERATIONS FOR CANCER OF BREAST.

DR. J. COLLINS WARREN, Boston, said that out of 416 cases of primary operation for cancer of the breast at the Massachusetts General Hospital from 1894 to 1902 inclusive, 376 were traced to a conclusive end result at an average period of eight years after operation. Sixty-four patients were alive and well, and seven died without recurrence over three years after the operation. There were 320 attempts at radical cure, 67 of which, or 20 per cent., were successful. During this same period palliative operations were performed on 56 patients, 15 per cent., and 52 cases were discharged untreated. Cases in which the tumor was ulcerated, or was adherent to the skin or to the chest wall, and cases in which the axillary glands were palpably enlarged, gave notably less promising results than when these conditions did not exist. No case with palpably enlarged cancerous glands above the clavicle, and no case of cancer of both breasts was cured. Medullary carcinoma was more grave than scirrhus, and adenocarcinoma and colloid were relatively of a far less malignant type. The duration of the disease, other than in the individual case, exerted little influence on prognosis. Extensive operations with wide removal of skin gave the greatest freedom from local recurrence. Removal of the pectoralis minor appeared to be of slight significance. Incomplete operations in early cases yielded better results than extensive operations on cases which were well advanced. Recurrence in the scar occurred in less than one-half of the cases. Internal metastasis was most frequent in the lungs and mediastinum, in the axillary and supraclavicular glands, the liver and the spine. Seventeen out of 88 cases, or 19 per cent., of those passing the three-year limit without evidence of recurrence, showed recurrence later, and four patients developed recurrence six years or more after the operation.

DR. FREDERIC S. DENNIS, New York, reported on 50 patients whose subsequent histories are known. He divides the entire number into three groups, the first group comprising cases all of which have remained cured beyond the three-year limit, and a few even 25 years. The second group remained cured beyond the three-year limit, the patients dying many years after the operation from causes independent of carcinoma. The third group comprises cases which remained cured beyond the three-year limit, the patients dying many years after from metastases in the internal organs.

In the first group he reports 39 cases permanently cured and nearly all of these patients have been seen or heard from very recently. In the second group there were four cases. These patients died from acute diseases, though they lived many years after the operation. The third group, of which there were seven, terminated many years after the operation from metastasis of the internal organs.

The results of these investigations demonstrate some important clinical facts: 1. That cancer of the breast is sometimes permanently cured, or at least 25 years have elapsed with no evidence of a return. 2. That cases may go as long as 18 years and yet finally have a return in some other organ. 3. That in the cases in which no return has been observed the operation was performed almost without exception within six months from the incipiency of the disease, thus showing the great importance of early operation. 4. That the more radical the operation within reasonable limits, the better the prognosis. 5. That in some cases in which the outlook was most unfavorable as manifested by extensive ulceration, hemorrhage, widespread axillary involvement, the end results have been entirely satisfactory.

The author laid particular stress on the following points: That early radical operation is most important; that in some cases with extensive ulceration and hemorrhage and widespread axillary involvement, the end results have been satisfactory. In several cases the patients are well four and eight years following operations done under these most unfavorable conditions.

DR. WILLY MEYER, New York, said that all of his 86 cases, with the exception of one, were females; the youngest was 28, the oldest 72 years of age. His figures showed that 28, or 35 per cent., of the 80 patients traced, are alive and well to-day, nine having been operated on within the last three years. Four others died from six to eight years after operation. Two died of recurrence; the other two of diseases not connected with the original trouble. Five lived from three to five years after operation. Three, though living, show signs of recurrence. Forty to 50 per cent. died within three years after operation. Eight of the patients died of metastases in the absence of either local or regional recurrence.

Regarding the wisdom of invariably cleaning out the supraclavicular space at the time of operation, he states that his own experience has pointed rather against such a procedure. It was not done in any case where the patient remained well from five to twelve and a half years after operation. Concerning the preservation of the subscapular nerves, he stated that he always tries to do so; still he has in three instances seen a recurrence take place around the second subscapular nerve. In spite of this observation he would not consider the removal of these nerves warranted, in view of the resulting disability with regard to the proper use of the arm. Every one of his patients has the perfect use of the arm. Only one patient has a somewhat pronounced edema of the arm. The postoperative neuralgia or neuritis of the brachial plexus has proved to be transitory in every instance.

DR. LEWIS S. PILCHER, Brooklyn, dealt particularly with 18 cases in which the evident extension of the disease at the time the patients first presented themselves was great enough to arouse suspicion of possible infection of the lymph nodes above the clavicle. In four cases glandular masses in the neck were distinctly palpable; of the 14 in which the examining finger could not appreciate the presence of diseased nodes in the neck, section revealed infected nodes present in 11; and in only three cases appreciable disease was not recognizable on section. These three patients all have remained well from the time of operation, a period of five, one and a half and one year, respectively. Of the four cases in which the supraclavicular glands were palpable before operation, one patient died three months after operation, evidently from internal metastasis. The second patient had two recurrences and died five years after the primary operation. The third patient died two years after operation, it is thought, from a carcinomatous element in the pulmonary condition, she having been said to have died from pneumonia. The fourth is now, two years after operation, perfectly well, without any evidence of recurrence. In each of the foregoing cases the supraclavicular spaces were cleared out and the typical operation was performed on the thorax and axilla. Of the 11 remaining patients, one died

from myocarditis seven weeks after operation; three developed speedily both regional and distant metastases, all dying within a year; a fourth was reoperated on for a recurrent nodule in the lateral thoracic region a year after the primary operation; she died three years after the primary operation from carcinoma of the liver. A fifth patient remained well for five years, but has now developed both supraclavicular and thoracic recurrences. Four patients remain free from recurrence after periods of three, three and two years and one year, respectively.

DR. ALBERT VANDER VEER, Albany, N. Y., cited some interesting cases of return of the disease very late after the first operation, one occurring 12 years after the first surgical intervention. The shortest period of recurrence was three months. He said that careful study of statistics impresses one with the fact that where operation is done before involvement of the axillary region a better percentage of recoveries follows. Dr. Vander Veer reported two cases of metastasis of the long bone, one three years after amputation of the right breast, the patient dying, about four weeks later, from all the evidence of carcinoma of the pleura, possibly of the lung, on the left side. Many patients presented with well-defined carcinoma of the breast, also uterine fibroids. In operations for both conditions patients have usually done well, but there is a greater degree of anxiety for the surgeon. Where only the breast was removed patients seemed to live comfortably for many years, with no apparent disturbance from the uterine fibroid. Patients do best who have passed the menopause.

DR. A. J. OCHSNER, Chicago, reported on 164 cases. Of these 101 have been traced to the present time. Fifty-seven of the patients are still living, all but two without recurrence. Thirty-nine have lived more than three years; 25 more than five years; 5 more than ten years; 5 died from shock; 20 died within one year; 6 within two years; 6 within three years; one within four years; 2 within five years, and one each, six, seven, eleven and fourteen years after the primary operation. Five patients died free from recurrence. Two of these lived for three years, and one each for seven, nine and ten years. During the past six years all patients have received postoperative Roentgen ray treatment while in the hospital, and 22 continued this treatment after returning to their homes. Several patients were apparently benefited by this treatment.

DR. AUGUST F. JONAS, Omaha, reported on 260 cases, 211 of which were carcinomatous. In all the cases a radical operation was done—complete removal of the entire breast and axillary contents in the very early cases, and in the later ones removal, in addition, of both pectoral muscles and the fat from the supraclavicular triangle. In a number of instances portions of one or several ribs were removed wherever there was the slightest indication of the neoplasm having approached a rib.

The author's operative experience comprises 211 primary operations for cancer of the breast, 30 operations for local recurrences in his own cases, and 14 in patients operated on primarily by other operators. Out of this number there were six deaths.

Of 177 patients that were traced, 38 had a recurrence in one year; 34 in two years. One hundred and five were free from every evidence of disease after three years.

DR. NATHAN JACOBSON, Syracuse, N. Y., reported on 71 cases which he was able to follow. Thirty-five of these patients are still alive, having outlived the three-year period. Three died of intercurrent disease not cancerous. The remainder died of cancerous metastases. Reference is also made to late recurrences, in one case thirteen, and in another sixteen years after primary operation.

DR. JOSEPH RANSOHOFF, Cincinnati, showed that 20 per cent. of patients passing the triennium of safety still had recurrence in the scar or died of metastases. After five years recurrence is less common. In one case the disease returned in the scar twenty-one years after the first operation. A second operation at this time was followed by return of the disease within a year, and death of the patient from pulmonary carcinoma a year later. The author collected, including his own, 37 cases developing seven years or more after the first operation. Of these 26 were clearly local and 11 were doubtful. He did not include cancers of the other breast or of internal organs, like the stomach or uterus, as recurrences. Of clean local recurrences 10 occurred after seven and eight years, 2 after nine, ten, eleven, twelve and fifteen years, and one each at varying intervals from fifteen to twenty-five years.

ILLINOIS STATE MEDICAL SOCIETY.

Fifty-Seventh Annual Session, held at Rockford, May 21-23, 1907.

(*Continued from page 1980.*)

Hyperthyroidism.

DR. ARTHUR R. ELLIOTT, Chicago, considered the forms of thyroid toxemia that are less intense and clinically less distinct than Graves' disease and due to transient disturbance of the thyroid functions. He cited illustrative cases, after which he discussed the etiology, frequency and clinical value of the condition.

Treatment of Polyneuritis.

DR. JULIUS GRINKER, Chicago, said that the early diagnosis of this disease must be based on, first, a proper recognition of disturbances of motion, sensation or co-ordination; second, the state of nutrition of muscles and nerves as evidenced by atrophy, flaccidity and changed response to electric stimulation; third, the state of the reflexes. Early treatment should aim to remove the cause or causes; to relieve symptoms; to prevent deformities; to maintain the muscles in a high state of nutrition until normal nerve conduction shall have been re-established.

Hysteria and Neurasthenia.

DR. L. HARRISON METTLER, Chicago, said that these are distinct clinical entities. They are often observed together in the same patient. When so associated, each is fairly distinguishable from the other. Hysteria is primarily a psychosis, a disorder of personality, while neurasthenia is primarily a neurosis, a neurotic inadequacy. Hysteria is a psycho-physiologic functional defect; neurasthenia is a neuro-histologic anatomic defect. The cardinal characteristic of hysteria is psychic changeability, while that of neurasthenia is an elemental failure or weakness. For hysteria the treatment should be psycho-therapeutic; for neurasthenia, physical reconstruction.

Septic Tank System.

DR. E. F. BAKER, Jacksonville, said that although the practical working of the septic tank has been known for several years, and is in practical operation in a large number of cities; its value is not yet fully realized. He believes it is the coming method of sewage disposal under the conditions found to exist in many of the populous sections of this and other states.

Operation for Cystocele.

DR. ARCHIBALD R. SMALL, Chicago, pointed out the inadequacy of the older methods to produce permanent results. The main principle of the operation recommended is to split the anterior vaginal wall from near the meatus to the cervix; widely separate the bladder from the vagina; remove the redundant vaginal wall, and join the cut edges of the vagina by interrupted sutures. In cases of prolapsus of the uterus, he spoke of the necessity of suspending the uterus either by the Kelly method or by means of the round ligaments, in order to give permanent results.

Malaria as a Surgical Complication.

DR. THOMAS M. ADERHOLD, Zeigler, said that patients who harbor the parasite of malaria in their blood, but who show no acute symptoms of malaria, can be operated on without delay and later treated for malaria when the symptoms appear. No temperature either before or after operation can be called malarial unless the parasite is found in the blood. If the temperature rises after an operation and no parasites can be found in the blood, it should be considered as due to sepsis.

Puerperal Infection.

DR. ROBERT T. GILLMORE, Chicago, cited the history of a normal case of labor, which was complicated with a severe puerperal infection which manifested itself on the eleventh day.

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He gave a report of the blood count and described the convalescent period. There was no evidence of autoinfection in this case. He traced the time of invasion of the streptococci in this particular case to the seventh, eighth or ninth day after delivery. It seemed probable that the douches given on the initiative of the nurse about this time were the direct cause of the infection. For the benefit of his future patients, the author reads what he has printed on the back of his obstetrical lists, which he gives to his pregnant clientele.

Rapid Osteoclasis Versus Osteotomy.

DR. FRANK B. LUCAS, Peoria, took an account of the lack of technic given by orthopedic authors on the use of the Grattan osteoclast. Cuneiform osteotomy is particularly decried as producing shortening in the tibia, whereas osteoclasis produces lengthening, thereby increasing stature. Manual correction of bow-legs in the early period, followed by repeated casts, is given as the best method of correction in infants just beginning to walk. The fracture, usually a four-fifths or green-stick, can be completed manually, if necessary, and the in-or-out twisted tibial deformity corrected by hand, the cast being applied and the leg held in over-correction until the plaster is firm. About four weeks in plaster is sufficient. In correction of knock-knee there is usually only an osteokampsis or bending of the femur at its lower third, and legs are put up in over-correction so they resemble bow-legs while in plaster.

Paralytic Deformities of the Legs.

DR. E. W. RYERSON, Chicago, discussed two varieties of paralytic deformities of the leg, namely, the cerebral or spastic paralysis and anterior poliomyelitis. He said medical treatment is of little value. Operative treatment is of several kinds, such as tenotomy, nerve grafting and tendon transplantation.

President's Address.

DR. J. F. PERCY, Galesburg, in his presidential address, said, among other things, that the medicine of the future will find the physician recognizing his need for dependence on his colleagues. Medicine of the future will understand and correct the loss that is sustained in our day by failure to recognize that back of every physician are ambition, hope, aspirations, good fellowship, and the sincere desire to be well thought of by his fellows. The days of radicalism in medicine are gone, never to return. The day of schools in medicine is also gone, never to return.

At present the laboratories and hospitals are furnishing valuable knowledge for the prevention and cure of disease faster than it can be given to or made practical use of by the physician in his every-day work. "Clothed with character, robed in the mantle of ceaseless toil for the sick, underpaid, often unappreciated, frequently legislated against, carrying the rod of science with an altruism that knows no limits, the physician of to-day, of yesterday and of to-morrow is only among his peers when in the company of the earth's most exalted."

Acute Mastoiditis.

DR. L. R. RYAN, Galesburg, pointed out the frequency of acute otitis media purulenta in our climate, affecting all ages and classes. The most dangerous complication is mastoid abscess. He described the methods of prevention, and said that if abscess occurs an operation is almost imperative. Wilde's operation should be performed early. He cited a series of cases, the patients ranging in age from 2 to 70 years.

Plastic Surgery of the Urethra.

DR. G. FRANK LYDSTON, Chicago, demonstrated his method of reconstructing the penile urethra and closing urethral fistulæ by flaps taken from the scrotum and penis, making a double-layered floor. He reported a number of cases operated on successfully by this method.

Scopolamin and Morphin Preliminary to General Anesthesia.

DR. CLIFFORD U. COLLINS, Peoria, said the advantages derived from this method are (1) the tranquil droway state of mind which it produces in the patient before the general anesthetic is administered. The patient feels an irresistible tendency to close his eyes and sleep. Second, by the preliminary use of scopolamin and morphin the tranquil condition of sleep is produced in any patient, regardless of age, with the same desirable results. Third, a great deal less of the general anesthetic is required. Fourth, scopolamin produces a dryness of the throat which is very desirable when ether is administered, because it prevents the flow of mucus usually produced by the ether. Fifth, the patient usually sleeps for three or four hours after the operation. The smarting, burning pain of the incision has usually ceased before the patient awakes. Sixth, the postoperative vomiting is markedly lessened. The only disadvantage is the varying effect of the single dose on the patients.

Varicose Veins and Ulcers of the Leg.

DR. W. S. ROYCE, Chicago, described the ambulatory treatment which he says gives great relief, and sometimes effects a permanent cure, requiring no loss of time on the part of the patient. He illustrated his method of treatment on models and gave a short comparison of it with other treatment.

Gall-Bladder Surgery.

DR. J. E. ALLABEN, Rockford, described three unusual cases. The first was one of exophthalmic goiter, with large stone in the gall bladder, with adhesions about the gall bladder and pylorus causing symptoms which simulated benign pyloric stenosis. A cholecystotomy was done, with death on the third day from pulmonary edema. Case 2 was one of cholelithiasis, in which a cholecystotomy was performed, with death on the third day. Although a postmortem was made, the cause of death was obscure, but it was probably due to antointoxication. Case 3 was one of cholecystitis which complicated pregnancy. The gall-bladder symptoms simulated gallstone colic. The woman was delivered of a healthy full-term child. Four months later return of symptoms necessitated a cholecystotomy. She was relieved for one year, when the symptoms returned. Examination revealed a displacement of the right kidney of second degree; the kidney was held in place by a Dunning kidney pad and abdominal supporter. The woman had relief for one year, when her symptoms returned. Cholecystectomy, with Dr. E. W. Andrews' operation, colohepatopexy (colon substitution), was performed. Death occurred on the third day from hemorrhage of the liver.

Otitic Brain Abscesses.

DR. FREDERICK K. SIDLEY, Peoria, reported three cases, and said that surgical interference in brain complications due to ear disease was unsatisfactory in a large percentage of cases. Brain abscesses have an unknown beginning and many develop from diseases of the tympanic cavity that are regarded as simple and not serious. All discharging ears should be considered serious, and the first step in the treatment of any brain complication from ear disease is the prompt diagnosis and treatment of the first discharge.

Practical Venereal Prophylaxis.

DR. DENSLOW LEWIS, Chicago, said that professional opinion now endorses publicity and advocates instruction of the laity. He described the methods that are favored by state and national societies. He considered the prostitute as a purveyor of infection and said there should be recommendations for more consistent appreciation of her position in society. He advocated judicious care and quarantine as a factor in venereal prophylaxis.

Indications for Cesarean Section.

DR. E. C. FRANING, Galesburg, presented the following conclusions: 1. Practice pelvimetry on all primiparæ. 2. Do pelvimetry on all multiparæ who have given a history of difficult labors. 3. In all cases of flat rachitic pelvis, with true conjugate of 8.5 cm., or less, prepare for and do Cesarean section. 4. All cases with true conjugate between 8 and 8.5 cm. must be looked on as probable Cesarean sections. Allow patient to go to term and into labor. Prepare patient thoroughly as for surgical operations, and make vaginal examination for correct position, etc. Make no more examina-

tion until patient has been in actual labor four hours, when, unless the head has made a decided attempt to enter the pelvis, do a Cesarean section. 5. All cases with a true conjugate between 8.5 cm. and 9.5 cm. should be considered as possible Cesarean sections. 6. The fetal mortality is so high in prematurely induced labors that it is totally unwarranted as compared with Cesarean section. 7. The interest of the child will force us to honor Cesarean section more often in the treatment of placenta prævia than at present. 8. Never do abdominal Cesarean section on an eclamptic unless she has a considerably contracted or obstructed pelvis, or to save a live child from a dying woman.

(To be continued.)

Section Discussions

SYMPOSIUM ON CATARACT.

DISCUSSION ON THE PAPERS OF DRS. JACK, WEEKS, FOX, WILDER, SCALES AND CALLAN.*

DR. CHARLES STEDMAN BULL, New York City, said that the necessity for a secondary operation on a more or less opaque capsular membrane, after an extraction of cataract, occurs in from 50 to 75 per cent. of the cases. Such an operation should never be performed until the eye has entirely recovered from the effects of the first operation, and this period may vary from six weeks to as many months. If all channels of communication between anterior and posterior chambers are blocked, a large, free opening must be made through the obstruction, in order to stop traction on the iris and ciliary body, before the eye can become quiescent. He also declared that the great danger to be feared is traumatism to the parts which may light up a new inflammatory attack, completely close the pupillary space, and end in loss of the eye from iridocyclitis and phthisis bulbi. He agreed with Dr. Callan that there is great danger in an overhasty operation, before the eye has recovered from the primary operation, and also in a mistaken choice as to the method of operating. To attempt an opening in any form of secondary cataract by tearing through it, is bad surgery and should be abandoned entirely; for no matter how done, it causes traction on the iris and ciliary processes which may set up iridocyclitis or even glaucoma, ending in phthisis bulbi, or possibly a permanently painful, irritable eye, which demands enucleation in order to prevent the possibility of sympathetic ophthalmitis. These membranous obstructions, of whatever nature, should be cut with the knife. If the membrane be very thin and diaphanous, like a cobweb, Dr. Bull prefers to use a very slender Graefe cataract knife, the cutting edge having a convex curvature. The knife is entered near the limbus on the outer or upper side, and the membrane should be divided transversely near the upper margin of the coloboma. The handle of the knife is then elevated and the blade passed vertically down to the lower margin of the pupil, the edge turned backward and the membrane divided vertically upward so far as the transverse incision. Dr. Bull does not use the knife-needle. If there are thicker, tougher bands crossing the membrane in any direction, he avoids cutting these bands with the knife, as too much traction is involved, but passes the knife through the thinner portions of the membrane. When the membrane is of the dense variety, or is crossed by dense bands of tissue, he does not use the knife, but the forceps-scissors. He makes an opening in the cornea near the upper limbus with a narrow keratome, bent on the flat, and passes the keratome transversely through the membrane. He inserts the forceps-scissors closed through the cornea and membrane, opens them and passes one blade behind the membrane and one in front and cuts down to the lower margin of the pupil. The bands being divided, the membrane splits. If it does not, he makes another vertical incision nearer the temporal side, which will almost always insure a V-shaped opening. If there is a very dense membrane, including incarcerated iris as well as capsule and exudation, the whole iris tissue must be divided laterally on either side to the full extent of the original coloboma, so as to free the periphery of the iris and the ciliary processes from all traction. The vertical incisions by the forceps-scissors must be carried entirely through the lower sphincter margin of the iris. It should not be forgotten that while the primary object of operating on secondary cataracts is to make an opening, through which the patients may see, it is all important that this should be done with the minimum of violence. All traction on the iris must be avoided.

DR. MYLES STANDISH, Boston, expressed his agreement with Dr. Jack's opinions. It must be borne in mind, he said, that the cataract patient has probably waited for months, and perhaps for years, with the knowledge of the inevitable operation oppressing him. As his sight has failed he has looked forward to the operation with mingled hope and fear, with the result that he often comes to the operating table under a high nervous tension, if not actual apprehension. This is often true when the patient's outward demeanor is quiet and philosophical. When, under these circumstances, operation is done under local anesthesia, he is not only conscious, but acutely sensitive mentally to everything which is happening. All the details of preparation should be finished before the patient enters the room, instruments should be laid out, tables arranged, and all the little bustle incident to the preparation for an operation over. The assistant, nurse and onlookers, if there be any, should be still on the entrance of the patient and quietly take their places. No conversation with regard to the patient should be permitted after he enters the room, for in his acutely sensitive condition the most commonplace remark may be seized on, twisted into something entirely different, and a theory as to some new and appalling danger formulated in a few seconds. Onlookers should be warned beforehand that comments, whispered sentences or exclamations are not welcome and may be disastrous. The first instillation of the local anesthetic should be made by the operator himself, as it gives the patient confidence, and should be gently placed in the lower conjunctival cul-de-sac, not dropped on the cornea. It is not well to begin the operation by startling the patient. After the collyrium is instilled the eyes should be kept closed to preserve the corneal epithelium if cocain is used, and to prevent the patient from watching those about the table and misinterpreting chance expressions on their faces. When the operation is begun all persons should be so placed as to be without the patient's field of vision, so that sudden motions may not attract his attention during the operation. For the same reason all instruments should be handed to the operator in such a manner as to be unobserved. It is well for the operator never to ask suddenly for an instrument, as it immediately suggests that something has gone wrong. It is also well to arrange beforehand that sudden and disturbing noises should not be permitted to happen in the operating or adjoining rooms. Dr. Standish declared that the importance of these details is often unconsidered, but he thinks that all will agree that a proper control of the patient is essential for a successful cataract operation, and that anything which aids in that effort is not to be lightly disregarded.

DR. CASEY A. WOOD, Chicago, said that when one considers the extent and locality of the incision employed by expert operators, as well as the various forms of operations in vogue to-day, the conclusion seems inevitable that the personal equation must enter largely into the procedure known as cataract extraction. It seems logical, however, that some operative principles must underlie a safe and effective bulbar incision, and these, Dr. Wood feels sure, are comprised under the title of Dr. Week's paper, "Desirable Features." Dr. Wood, however, does not endorse entirely Dr. Weeks' satisfaction with adrenalin, or any of the suprarenal extracts, as a hemostatic unless the circumcorneal incision is carefully restricted to the limbus and the conjunctival flap is more than 1 mm. wide and 2 or 3 mm. long. Such a flap is not always easy to make. Should it be much larger, free hemorrhage is likely to occur into the anterior chamber in spite of the adrenalin. This obscuration of the field of operation, added to that produced by the presence of the flap itself, is a serious drawback. While it is true that blood effused into the an-

* The first three papers will be found in THE JOURNAL last week, the last three in THE JOURNAL this week.

terior chamber eventually becomes absorbed, yet the importance of an immediate and perfect view of the iris, the lens and the margin of the corneal wound is so great that it can hardly be overestimated. Moreover, the formation of clots and their incomplete absorption, as well as their adhesions to débris in the anterior chamber and, in some cases, their persistence as organized material in the area of the pupil, may seriously interfere with the visual result. For this reason, the attempt to utilize the conjunctival flap should always be associated with irrigation of the anterior chamber. By this means, Dr. Wood declared, one may not only effectually free the field of operation of clots, but may also insure that precise coaptation of the wound margins so needful for a perfect recovery.

On many occasions Dr. Wood has used with satisfaction a modification of the so-called shoulder incision. If the wound lie at the limbus, involving rather the sclera than the cornea, it will be found that when quite four-fifths of the incision has been completed the edge of the narrow Graefe knife, used for the purpose, will be overhung along its whole length by the translucent margin of the sclerotic. In this case, it is possible that the cut may involve the conjunctiva at some part of the incision. The knife should then be turned at right angles to its previous plane and made to cut its way outward. If this is correctly done, the "shoulder" will be made more in scleral tissue than is pictured in Dr. Weeks' illustration and may include a short conjunctival flap. The advantage of such an incision is that iris prolapse is avoided and the flap will be furnished support without cutting off its blood supply. Dr. Wood also directed attention to the fact that blood clots, lenticular débris, capsular tissue or any other foreign body, allowed to remain between the lips of the wound, entirely nullifies the specific object of the shoulder incision. Dr. Wood doubts that the ability to use either hand with equal facility is readily acquired by the average surgeon, and as a good visual result is the object sought it would seem as if the operator, unable to use his left hand as well as his right, ought to stand or sit in front of his patient in the extraction of a left-sided cataract rather than take any risk in the performance of this important operation. Dr. Wood said that Dr. Weeks does not tell us what value, if any, he attaches to the use of the blunt-pointed knife for completing the incision after puncture and counter-puncture have been made. Dr. Melville Black exhibited to the Section a few years ago such an instrument modified from one previously described. Dr. Wood believes that the argument in favor of preliminary iridectomy might be more strongly put than Dr. Weeks has seen fit to state it. If it is considered desirable to give the patient the benefit of the doubt when he possesses one eye only, it surely argues that there is some virtue inherent in the rather frequent performance of the preliminary procedure. It is certainly easier to make a small, neat and well-placed exsection of the iris segment before extraction of the lens than after it and probably there is less danger of iritis when a preliminary operation has been done.

Dr. Wood concluded his discussion by asking: Does an ordinary iridectomy reduce the proportion of evil results in cataract extraction? Does it hasten the maturity of an unripe cataract?

DR. FRANK ALLPORT, Chicago, believes that the combined operation is the best, at least for the average surgeon, and that the very best operation of all is the one affording the opportunity of making a preliminary iridectomy. There can scarcely be any question as to the superiority of this procedure over all other procedures, at least so far as safety is concerned, and this, after all, should be the most important issue. When the iridectomy is done some weeks before the lens is removed, it adds many degrees to the safety of the operation. The visual results are excellent. So far as the cosmetic results are concerned, a well-performed combined operation does not deform an individual. The upper lid, as a rule, conceals the coloboma. Dr. Allport does not believe it wise for an inexperienced operator to take the risk of endeavoring to perform a simple extraction for the purpose of a hoped-for beautiful cosmetic result. He said that the simple extraction should never be performed in an operating room. The chances for iritic prolapses are too great. If a simple extraction is performed at all, it is better done with the patient in the bed in which he expects to lie, or at least in the bedroom, in a good operating chair. Dr. Allport does not see the necessity of removing the speculum so early in the procedure. He removes it after he has made the iridectomy and lacerated the capsule.

Considering the question of cystitomes, Dr. Allport does not believe it is so much the cystitome as the man behind the cystitome. He likes the bent von Graefe instrument. It has always given him satisfaction. He regards the cystitome much better for lacerating the capsule than any kind of forceps that can be used. It is much easier to use and consequently is much safer. He does not think that a little lens material left in the posterior chamber is apt to do any harm. A slight iritis may follow, but unless a great deal of lens substance is left, which is unnecessary, the iritis is almost invariably of a slight character and easily controlled. As between the two dilemmas of allowing a little lens substance to remain or running the risk of producing escape of vitreous he would certainly choose the former. Dr. Allport does not like to use the curette within the anterior chamber for the purpose of extracting the lens matter. The anterior chamber should be entered by instruments as little as possible. He almost invariably washes out the anterior chamber with normal salt solution. He has devised an anterior chamber syringe to be used for this purpose. He considers the extraction of the cataract within the capsule a totally unnecessary operation, in that its results are, on the whole, not so good as those of the other orthodox procedures, and certainly the risk to the patient must be greater.

Dr. Allport views the couching method with more or less preconceived aversion. He has operated a number of times for dislocated cataractous lens by the discission process and has never had occasion to regret it. Of course, the scarification must be performed very delicately for fear of still further dislocating the lens. It only require a very small opening into the lens capsule to afford access to the aqueous humor, and if only a small incision is made but little swelling occurs and eventually a large amount of absorption of lens substance takes place. Reneedling will do away with all the lens matter. He has often been surprised by the amount of lens substance which absorbs in elderly people after a cataract operation in which, for one reason or another, a large amount of lens substance has been allowed to remain in the field of operation.

Dr. Allport mentioned four elements which he believes have been conducive to his good results during the past few years. One is the free use of argyrol in a 25 per cent. solution. He has frequently felt that he has saved eyes that would otherwise have been lost by totally filling the anterior chamber of the eye with an argyrol solution before the covering is applied. He has never seen any irritation which could be attributed to this procedure, and the argyrol absorbs and leaves no stain. Another feature has been the invariable use of rubber gloves for the operation and first few dressings.

Lastly, is the gentle instillation of cocain into the anterior chamber as soon as the incision has been made.

DR. GEORGE E. DE SCHWEINITZ, Philadelphia, declared that the preparation of the patient as for a general anesthetic insisted on by Dr. Wilder is of great importance, as limiting the possibility of infection and as influencing the problem of autointoxication. It is Dr. de Schweinitz's experience that carbolic acid is the best of the various cauterizing agents advocated in cases of beginning neurosis of the flap.

Recurrent hemorrhages that occasionally occur in the most correctly performed operations are caused by leakage of vessels already diseased and represent the type of oozing hemorrhage. In these circumstances Dr. de Schweinitz said that the best remedy is that which modern investigation has shown to be capable of aiding the coagulability of the blood, the various calcium salts, of which the chlorid is perhaps the best, were it not for its disturbing influence on digestion. Dr. Hare has come to the conclusion, and Dr. de Schweinitz has

followed his leading, that lactate will do just as well. It can be given in fairly large doses, from 10 to 30 grains, and can easily be given by hypodermic.

In regard to the formation of opacities in the vitreous after cataract extraction, a remedy which has seemed to Dr. de Schweinitz to be good in place of the iodids is a good syrup of hydriodic acid. Some preparations now on the market furnish a therapeutic result as good as that obtained by the iodids and with the happy result of rarely disturbing digestion. Administration should be begun in small doses, 30 minims, and increased to as much as a dram three times a day.

DR. J. A. WHITE, Richmond, Va., said that if Dr. Scales' contention as to its advisability can be practically demonstrated he might be willing to do away with the bandage in a limited number of cases, but, even admitting that it is the most suitable method for certain selected cases, Dr. White fails to see the rationale of leaving an eye unprotected that has had such an accident during the operation as the rupture of the hyaloid membrane, with loss of vitreous.

If Dr. Scales treats penetrating wounds of the eyeball from other traumatisms than cataract extraction by the same open method, Dr. White would consider his handling of such cases rather radical and revolutionary and opposite to accepted views. It has not seemed to Dr. White that the bandage interferes with natural drainage of the eye or brings about retention of secretion. A properly applied bandage will absorb whatever secretions may accumulate in the conjunctival sac, provided the lids do not become agglutinated together and provided that there is no tendency to spasmodic contraction of the lids. Dr. White does not remember having seen any secretion in the conjunctival sac when he opened the eye after cataract extraction in the absence of any infection. If after the operation the conjunctival sac is filled with sterilized vaseline, there is no possibility of the lids sticking together and there is no retention of secretion. Dr. White does not see why the slight difference in the axes of the eye should make it impossible to apply a bandage without disturbing the relations of the iris and capsule or that his method of applying the bandage to the operated eye would disturb these relations so much as the movement of the lids. He applies a wet pledget of bichlorid cotton to the unoperated eye, filling the orbit with gauze and strapping it down tight enough to make the unoperated eye practically immovable. A thin pledget of wet bichlorid cotton is also put over the operated eye and the orbit filled loosely with gauze kept in place by adhesive strips, so that there is practically little or no pressure on that eye. In his experience this has not produced discomfort or caused restlessness or uneasiness. Some patients have complained of the eye being a little uncomfortable for a short while after the operation, but readjustment of the bandage always gives comfort. If the bandage should increase the involuntary mobility of the eye, what should be said of an eye without any protection but a wire gauze and kept more or less in constant motion because the other eye is uncovered and being used. That in old people the bandage sometimes produces entropion is a fact with which all are familiar, but it is very rare and does not occur in more than 1 per cent. of the cases. That the bandage is a factor in producing conjunctivitis, iritis and cyclitis, Dr. White said, is hard to demonstrate. Iritis in a mild subacute form is a common result after cataract extractions and usually appears about the third day, sometimes not until the fourth day. Instead of being due to the irregularity of the bandage, it is due, Dr. White thinks, to irritation of the iris by the passage of the lens through the pupil in simple extractions, or by traumatism when an iridectomy is done, or by the irritation set up by retained particles of cortex, or by a rheumatic or gouty diathesis. He agreed with Dr. Scales in advising the use of atropin, but does not think it wise to use it so soon after the operation in simple extractions, because he has seen it, when used so early, bring about prolapse of the iris; this, more especially, in cases in which the wound is linear and is not accompanied by conjunctival flap. Dr. White has found the conjunctival flap an annoyance when it sets up bleeding, as it sometimes does. It may be true that it diminishes danger of infection, as it heals more rapidly than the corneal section, but if virulent pathogenic organisms, such as pneumococci and streptococci, are present, infection takes place before the conjunctival wound heals. All ophthalmologists, as a result of experience, adopt certain methods. Dr. White prefers the method that he has followed in the extraction of about seven hundred cases, with a very small percentage of failure. Immediately after the operation, when the toilet is completed, he fills the conjunctival sac with a 25 per cent. solution of argyrol, which he leaves in contact with the eye two or three minutes. He then cleanses the sac and fills it with sterilized vaselin and applies the bandage. Instead of handcuffing the patient, he puts a Ring's mask over the bandage so that the patient can not hurt the eye with the hands, and enjoins perfect quiet and rest for twenty-four hours, and if the patient is not too restless for forty-eight hours. At the end of that time he allows them to sit up. As soon as the wound firmly closes he releases the unoperated eye, but keeps the operated eye protected for seven or eight days, as he has seen infection of the eye as late as the seventh day, in cases of slow healing, probably from the patient's hands

PROF. CARL HESS, Würzburg, Germany, stated that he has done the operation with iridectomy for some years; he tried the simple extraction for a few years and abandoned it because the amount of prolapse of the iris was so great and because he thinks that it is too dangerous. Nevertheless, the advantage of the round pupil is so great that other ways should be tried to secure it without this danger of prolapse of the iris. He believes that this only happens because the iris is a complete membrane and the vitreous and liquid from the ciliary body pushes the iris forward. This can be overcome if a little buttonhole is made in the iris. In this way the advantage of the round pupil is obtained without danger of prolapse. In the simple extraction, there have been in Germany about 20 per cent. of prolapses and with this method not more than 0.5 per cent. The incisions should be made in the sclerotic. The danger of infection is less in this way. Professor Hess never operates in the cornea. He used the bandage for many years and then tried the open treatment. He has done about a thousand operations with the open method, and the results were at least as good, or better, than with the bandage. He knows of no reason why the bandage method should be better; the bandage does not prevent the movements of the eye. To accomplish this the only way is to prevent the eye from seeing except under certain conditions, and to do this he has used a small capsule just above the eye with a small hole, so that to see the patient must look through this hole. This is not an ideal method, of course. He always uses atropin before operating, and if the operation is without accident, as a rule, he finds the eye, after four or five days, with dilated pupil, so that there is no necessity for using more atropin, but if the pupil is small after the second day and with a little irritation then atropin should be used—but never if the pupil remains dilated. He is of the opinion that the patient should be kept absolutely quiet after the operation and not moved; the patient should be put to bed without the slightest movement of his body. This is important in preventing prolapse of the iris. He thinks that it is a mistake to say that if the eye is left open the condition of the tears will be the same. Experiments have shown that if instillations of bacilli are made into the conjunctival sac and the eye bandaged, the bacilli can be found after twenty-four hours and later, but if not bandaged, and free movement of the lids be allowed, the bacilli disappear after twenty-five minutes, and may then be found in the nasal passages. That seems to him a strong argument in favor of the open treatment. He has had five hundred extractions without any loss by infection, and thinks that this method should be used more frequently.

DR. J. L. BORSCH, JR., Philadelphia, referred to Dr. Fox's statement, that his experience leads him to believe that if one would operate alternately on a series of cases far better results would be obtained in at least 75 per cent. in which iridectomy is performed than in those in which the simple method is carried out. Dr. Borsch does not believe that we

can say with any degree of certainty, *a priori*, that we are going to do the simple operation or the combined one in any given case, as each case must be a law unto itself. Personally, he does not like to do an iridectomy in a cataract operation, as he believes that the better operation is the simple one and always endeavors to perform it. In the ophthalmologic clinic at Biarritz, Laignier and he have adopted a technic which, they believe, renders the case more favorable to the successful result of the simple operation. Their patients in the French clinic consist mostly of Spaniards and Frenchmen from the nearby provinces, but they are as docile as the average patient in this country. The technic is as follows: The patient goes through the usual preparation, such as training them to move the eyes in any given direction, bodily cleansing and an examination of the secretions. The condition of the lachrymal apparatus, conjunctivæ, etc., is noted. If all is well, the evening before operation the lids and lashes are thoroughly cleansed and a solution of 1 to 100 cyanid of mercury is applied with a bit of absorbent cotton. About fifteen minutes before operating the lids and conjunctivæ are flushed with a borosalicylate solution, then a solution of 2 per cent. cocain is instilled in the conjunctival sac. This is repeated every three minutes until three instillations have been made, care being taken to compress the tear sac so that none of the solution can enter. When ready to operate, they inject one or two drops of sterile solution of salicylate of pilocarpin with a sterilized Moria aseptic glass syringe. The patient is made to look in the direction of his hands, which are placed in a position that will best enable the operator to make the incision. This incision is always made in that part of the cornea between the limbus and arcus senilis (when there is one). If there is marked myopic corneal astigmatism at axis 150 or 165 degrees, for example, they do not hesitate to make the incision parallel with the axis of the astigmatism, for they find that by so doing they often cure the astigmatism. If the astigmia is hypermetropic, the incision is made at a right angle to the axis. As soon as the anterior chamber is open the speculum is removed. If the iris shows no tendency to prolapse, the capsule is ruptured with the cystitome. The patient is then allowed to rest a moment or two and then gentle pressure is made on the eye through the closed lid, while the upper lid is controlled with the other hand. The patient, of course, is still made to fix his gaze in the direction of his hands, which are kept in the desired position until the lens is delivered. The irritation of the iris caused by the passage of the lens and the action of the pilocarpin which begins about this time causes the pupil to contract and the iris shows no tendency to prolapse. The patient is asked to close the eyes, and after a moment of rest any remaining cortical matter is expelled by gentle massage. The edges of the wound are placed in apposition and a few drops of the pilocarpin solution are instilled. The dressing, consisting of an oval wad of salicylated absorbent cotton between two layers of sterile gauze, is then applied and maintained in place by means of collodion or adhesive strips. They operate in the early morning and inspect the eye in the evening. For two or three days the patients are kept on one of the fermented milk diets.

DR. S. C. AYERS, Cincinnati, before making an extraction, instills a drop of atropin. The first day the pupil is well dilated. The toilet after the extraction is simple. After the extraction the lids are closed and three or four thicknesses of gauze are wet with bichlorid of mercury or sterile water, placed over the eye and pressed into the irregularities about the orbit so that it acts as a soft, pliable splint. Over this adhesive strips are applied. Dr. Ayers has not used a bandage for twenty years. When he finds the wound completely closed at the end of from twenty-four or forty-eight hours, he takes the bandage off and leaves it off. There is no reason why a wound that is perfectly healed should be bandaged, and the patient is much more comfortable without it. The eye has a chance to cleanse itself by winking and the secretions are carried down into the natural channels. He has been so well satisfied with this open treatment that he uses the method in all cases in which the wound is closed, and usually at the end of forty-eight hours. He allows the patient to sit up early, which is a great source of comfort, because these patients complain more of their backs than of their eyes.

DR. EUGENE SMITH, Detroit, said that in preparation of the patient he likes to use a fresh solution of argyrol, 10 per cent., before the operation. This, together with washing of the eyelids, seems to act well in cases free from irritation and chronic troubles. He prefers cocain as an anesthetic, because it dilates the pupil; it gives a guide to the rigidity of the pupil. He objects to the use of adrenalin because he has seen its use followed by postoperative hemorrhages. In Knapp's Archives, in 1894, Dr. Smith published an article on the use of morphin in all extractions, calling attention to its myotic effect and to the relief of the discomfort which follows operations for several hours. He also called attention to its prevention of spasmodic contraction and of cough. He uses it in all simple and in many combined extractions. He agreed with nearly all that Dr. Callan said, except as to the use of forceps. Many of Dr. Smith's patients have come to him years after operation, and to his surprise he has not had 5 per cent. of adhesions after extraction of the anterior capsule with properly constructed forceps. He thinks that this is due to the removal of the large number of the cellular secreting elements contained in the anterior capsule. He has followed this method exclusively for the last seventeen years.

DR. PETER A. CALLAN, New York, remarked that there is a great deal of difference between the so-called Graefe knives. The knife that is small with a tapering point is lost in the limbus and one can not follow the counter-puncture. A long, narrow, flexible point should be rejected. Furthermore, a knife with too thick a back should be rejected. The knife should not have a flexible point, should not be too long, and the back should not be too thick. Too small a knife, however, cuts with more or less irregularity. He thinks that the best knife made is the Critchett model. With this prolapse of the iris is avoided.

For the last ten years he has not used a bandage, but he has not had the courage to adopt the open method. He covers the unoperated eye with cotton, applies cotton loosely to the operated eye and puts on a mask. For some years he has abandoned the simple extraction. He makes the buttonhole in many cases instead. He thinks that the simple extraction is a very easy one compared to the combined, but life is too short to have the worry of it.

DR. E. C. ELLETT, Memphis, Tenn., showed two additions to the armamentarium of the cataract surgeon. One is a special bed without either head piece or foot piece; it is sufficiently high, and the cross-pieces are so placed that one can sit at the patient's head with his knees under the bed and be perfectly comfortable. The patient is not moved from the bed after the operation. He has found this bed feasible, as nearly all of his work is done in one institution. The operation is, of course, performed in the patient's room and not in an operating room. The second article is an anterior chamber irrigator consisting of a glass reservoir and a gold tip, the two fitting together by a friction joint and easily sterilized. This instrument is easily handled and answers its purpose well. Irrigation, in his opinion, should be reserved for cases in which cortical fragments are left in the anterior chamber. It adds something to the operation, is a possible additional source of infection, and unless the solution is perfectly bland and of the proper temperature is apt to provoke a spasm resulting in loss of vitreous. It should be used, therefore, not as a routine measure, but exceptionally and sparingly. The results of the cataract operation, from the patient's point of view, apparently leaves much to be desired. The best results are often not satisfactory to the patient, who seems to be annoyed by his absolute dependence on heavy glasses, through which he often sees satisfactorily only when looking exactly through the center. The higher the patient is in the social scale the more dissatisfied does he seem to be. These remarks are prompted by the vigorous complaint of a recent patient who sees 20/20th and Jaeger I, and is more complaining than any one in whom I have had absolute failure. From this point of view this often seems to be one of the least satisfactory operations.

DR. FRANK C. TODD, Minneapolis, said that when patients for some reason are unable to look down this is usually not due to lack of power of the muscles, but because the patient from anxiety or fear becomes "rattled" and seems unable to do at the proper time the very thing most required. It is Dr. Todd's practice to stand at the head of the patient in operating on either eye. In one of his cases, in operating on the first eye, he had considerable difficulty, as the patient would not turn the eye downward, and he anticipated the same trouble in operating on the other eye at a later date. He then thought that perhaps my patient could better control his eye if the operator's voice came from the opposite direction, and so before operating, as a test, he stood at the patient's head and asked him to look down; again he failed to obey the command. Dr. Todd then went around and stood by the patient's side, the voice coming from the direction toward which he desired to have the eye turned, and found that it promptly obeyed the command. The patient's natural tendency is to look in the direction from which the voice comes. Dr. Todd has found it wise to open the capsule after extraction in only 14.5 per cent. of cases in which this incision has been practiced. After applying an ordinary bandage in the accustomed manner, Dr. Todd carries around the head, outside of and only touching the bandage, a strip of one inch wide adhesive plaster, placing it near the lower border under the ears and higher up as it encircles the head above the ears.

DR. J. F. BYINGTON, Battle Creek, Mich., said that in anesthetizing the eye he instills the cocain first, because if the adrenalin be instilled first it blanches the tissues and interferes with the action of the cocain on the deeper parts. He mentioned one case in which he did the so-called "shoulder operation" in a patient 72 years of age.

DR. S. L. LEDBETTER, Birmingham, Ala., stated that on one occasion he had an unfortunate experience that spoiled a successful operation. Up to the third day the patient had a healthy normal pupil, but on that occasion some of his friends came in who thought it their duty to entertain him, and as the result of hearty laughter on his part he felt an acute sharp pain, and when Dr. Ledebtter opened the eye at the next visit he found prolapse of the iris. He has been very careful about patient's visitors since that time.

DR. L. A. W ALLEMAN, Brooklyn, testified to the value of the open treatment in cataract extractions. He stated also that the so-called Ring mask was described in ophthalmologic literature preceding its presentation by Dr. Ring.

DR. F. B. TIFFANY, Kansas City, Mo., thinks that it is necessary that the patient undergo thorough preparation before operation. It is his custom usually to dilate the pupil, to instill argyrol, to see that the patient has a movement of the bowels, and a bath the night before operation; if a man, he has him shaved. He said that a position back of the patient is preferable in operating. He makes the incision in the limbus, preferably in the cornea rather than in the sclera. He uses a simple dressing of sterile gauze and does not put a bandage around the head, but fastens the gauze with adhesive strips, without any metallic protector. He rarely does preliminary iridectomy.

DR. HERMAN KNAPP, New York, said that if it is not possible for the present generation to be ambidextrous, this accomplishment can at least be taught to the younger people. It is only necessary that when they begin they should not omit to use the left hand, and they can acquire the same dexterity with it, perhaps a little more, than with the right one. Dr. Knapp uses his left hand with rather more security, for instance, in an iridectomy. He does the simple extraction and also the combined. He does the simple extraction only when the eyes and the patient are healthy, so that he can expect to get healing without any disturbance. It is more difficult to get the lens out if the pupil is not dilated artificially.

DR. JOHN E. WEEKS, New York, said that it is his custom to have the conjunctival sac examined before undertaking the operation, and if the pneumococcus or other pathogenic germ is present he postpones the operation. He holds that the wound closes more quickly with the conjunctival flap. He uses adrenalin after the cocain is instilled, perhaps twice, and then he gets a flap that does not bleed to any extent, and the site of the operation is not obscured. The short flap advocated by Dr. Wood has just the disadvantages he speaks of, and they are sufficient to exclude it with Dr. Weeks. He said that preliminary iridectomy is advisable in some cases, but his results with it have not been any more satisfactory than in the cases in which he does iridectomy at the time of extraction.

DR. L. WEBSTER FOX, Philadelphia, said that every operator has his own experience and his own way of working; we meet with many accidents and we try to prevent these when we can. In the treatment of these cases of hemorrhage that occur in some forms of senile degeneration of the small arteries Dr. Fox has given gallic acid in these cases (5 grains three times a day). It is an old English remedy and he finds it a good one. He said that he has now in process of evolving a method of transferring the pressure from the cornea to the lens itself; an instrument to tilt the lens forward, hook into it and then scoop it out. There are cases in which the eyeball almost collapses and yet the patient does well; others do not; sometimes the loss of a small amount of vitreous does great harm. He is not yet sure that we can adopt the open method.

DR. W. H. WILDER, Chicago, mentioned particularly the closure of the eyes after operation. To be on the safe side he thinks that we must put on some kind of dressing to keep the eyes closed until the wound is healed. He feels very much safer if he can put on a dressing that he knows will prevent the patient getting his fingers up to the eye and causing infection. By putting it on as a moist dressing it is so easy for the patient that he will not make any undue pressure on the eye. Dr. Wilder prefers it to the ordinary strip because it does not make quite enough pressure on the lids to keep them closed. He can not see the rationale of the open method. It seems to him to a certain extent to be tempting Providence, and a number of patients will certainly neglect the warning given them; at the same time the open method offers additional chance for infection. When the wound has healed he takes the bandage off and treats the eye as an open case. Too much emphasis can not be placed on the necessity for the preliminary treatment of the patient and afterward to make sure that there is no autointoxication through the intestines. That is one source of delay in healing in many cases.

DR. J. W. SCALES, Pine Bluff, Ark., recalled the fact that he stated in his paper that there are six reasons for not employing the bandage, but did not give the last one. It is this: The patient can be assured that he will go through the period of convalescence on flowery beds of ease compared with those who have the bandage applied. Another point he emphasized is that every first idea that has ultimately benefited the profession has had to overcome prejudice. He urged physicians to lay aside their prejudices; the ideas they have been taught from infancy, so to speak, and to forget the fact that preceptors and text-books all teach the use of the bandage. If one reason can be given why the bandage should be employed, two reasons can be found why it should not. There are many cases in which Dr. Scales employs the bandage and in which he thinks it necessary; but in every case in which the lips of the wound are in contact the physician can rest assured that the patient will go through convalescence without having the eye red enough for a casual observer to tell that it has been operated on.

ANATOMY OF THE MIDDLE TURBINATE.

(*Continued from page 2105.*)

DISCUSSION

ON THE PAPER OF DR. LOEB.

DR. ROBERT LEVY, Denver, said that the thing that impresses him in Dr. Loeb's work is its importance from a clinical point of view. In view of the facts that there are so many anomalous conditions in the nasal structure and that we see so few cases of middle turbinate affection in which the relations of the surrounding parts are always the same, work of this kind

must result in a better understanding of the pathologic conditions. The section of a few heads, no matter how much may be done with the individual head, is but the beginning of results that will be of value. Not two or three heads, but possibly fifty or a hundred may be necessary to get satisfactory results, and any one who has the nerve to undertake the proposition is to be congratulated.

DR. H. P. MOSHER, Boston, called attention to the fact that the common statement that there are no ethmoidal cells at birth is not true, as this section of a baby's head at birth shows. It is customary to find one cell at the summit of the third meatus and one at the summit of the fourth meatus, when the fourth meatus is present. Since there are posterior ethmoidal cells present at birth, but no anterior cells, it explains why in the adult the posterior cells are so much larger than the anterior cells. The frontal sinus is not present at birth, but the fossa or pouch from which the sinus and the other frontal cells are to spring is present and rises a little above the cribriform plate. The sinuses, therefore, get their start earlier than one is accustomed to think they do. At birth the antrum and some of the posterior ethmoidal cells are present and the frontal sinus is just ready to start. Dr. Mosher believes that the sphenoid may start earlier than the time usually named, because at autopsy he recently found in a boy of 10 a frontal sinus a quarter of an inch in height, and a sphenoid as large as in the adult; that is, it measured from before backward nearly an inch. Lothrop did a distinct service when he pointed out that in about 10 per cent. of heads there was an ethmoid cell in the body of the middle turbinate. In Dr. Mosher's experience these middle turbinate cells open equally often into the middle meatus and into the third meatus. The facts that cells are so commonly developed in the middle turbinate and are often large should cause the old description of such turbinate as a cystic turbinate to be done away with, or, if it is retained, it should be clearly understood that the condition is so frequent that it should not be considered pathologic. The anatomy of the middle turbinate is so bound up with the anatomy of the middle meatus that they should always be considered together. In applied anatomy the middle turbinate would be of little importance were it not for the fact that it forms the inner wall of the middle meatus and so guards the most important drainage area of the nose. When enlarged the middle turbinate acts as a stopper for the anatomic flasks or sinuses which open under it. It is hard to make beginners see the full significance of this fact. Students seem to have the idea inborn that the olfactory fissure to the inside of the middle turbinate, between the turbinate and the septum, is the situation of the most important anatomic structures. In trying to correct this idea he was accustomed to say "surgically nothing of importance happens to the inside of the middle turbinate, everything happens on the outside." In clinical teaching he thinks it continually necessary to emphasize the fact that the middle turbinate is but an appendage of the ethmoidal labyrinth, therefore the removal of the middle turbinate does not open up the labyrinth; in order to acomplish this, much more has to be done. He thinks it is not, as a rule, realized how low the body of the middle turbinate lies. The low position of the body of the middle turbinate is forced on us in a striking manner when we operate on the ethmoidal labyrinth by the interior route; the route through the ascending process of the superior maxilla, the lachrymal bone and the anterior half of the os planum. The body of the middle turbinate lies below the line of the roof of the antrum. Therefore, in this operative procedure one works above the greater part of the middle turbinate, so that it is easy, unless specially guarded against, to leave most of the middle turbinate in place. Dr. Loeb had spoken, he said, of the parallelism between the line of the middle turbinate and the axes of the sinuses. It would not be surprising if this is a common occurrence, since the basal lamellæ of the ethmoidal labyrinth are parallel and arranged most symmetrically, and the sinuses are themselves ethmoidal cells. In a rather superficial examination of some thirty half-heads he found this parallelism common, but not constant.

DR. JOHN O. ROE, Rochester, N. Y., said that the ethmoid cells are only a continuation of the cells extending from the sinus to the sphenoid, the ethmoids being much more numerous than any of the other cells, of course, and for that reason it is called the ethmoid labyrinth. The middle turbinate, as Dr. Loeb stated, contains, in a normal condition, in a large number of cases, independent cells, and usually the opening into these cells is above; the floor of the cell is usually up behind the groove of the ethmoid. Consequently in empyema of these cells the drainage is bad. He found many cases of these large middle turbinates. It is the easiest thing in the world to detect these cells; by simply taking a knife and puncturing the most prominent parts of this bulbous ethmoid in the majority of cases the knife will go through into a cavity of considerable dimensions. There being a large cell, and the thing to do is to open it up along the base of the cell, thus giving it free drainage. He thought that in all cases where this bulbous condition of the ethmoid exists these cells should be sought.

DR. HANAU W. LOEB, St. Louis, said that in regard to the development of the ethmoid cells in the middle turbinate Dr. Mosher can speak with authority, and he doubtless agrees with Lothrop, who showed that these cells, in nearly half the cases, had the openings in the meatus, and that is likely the reason why so much trouble results. In all these cases the opening was in the upper portion and drainage was not easy. Dr. Loeb said that he was glad to hear confirmed the observation made of the parallelism between the middle turbinate and the occlusion of the cells. This work of reconstruction is undertaken in order to arrive at an accurate observation and measurement of these different cells, to show their exact relation to the turbinate and adjacent structures. Nothing, he thought, can be said in an authoritative way until a large number of heads have been measured, but he had taken occasion to speak of this as a matter of practical importance, hoping to stimulate other members of the Section in the work.

PATHOLOGY OF THE MIDDLE TURBINATE.

(Continued from page 2107.)

DISCUSSION

ON THE PAPER OF DR. GOODALE.

DR. EMIL MAYER, New York City, said that Dr. Goodale's view of polypoid inflammation differs from the views held by many pathologists, that a polyp is a secondary edematous infiltrate caused by necrosis of the bone. The practical deductions from this are of great importance, for if the latter view be correct bone disease must be looked for, especially in the accessory sinuses, in every case of polypus. The distinguishing difference between bone cyst and enlarged turbinal ethmoid cells is not, he thought, brought out so clearly as the condition warrants.

DR. OTTO T. FREER, Chicago, said that Dr. Goodale's paper brings to notice the tendency to dropsical swelling characteristic of hyperplectic and hyperemic conditions of the middle turbinate body. This ready occurrence of edema is an evidence of a naturally difficult return venous circulation from this turbinate, which explains the watery nature of chronic inflammatory hyperplasias of its coverings, as shown in the production of polypi and polypoid hypertrophies. Glassy, watery swellings of the mucous membrane of the middle turbinal, resembling an acute production of small mucous polypi, may, in his experience, also occur during acute intranasal inflammations and disappear with them. Dr. Casselberry's term of ethmorhinitis atrophicans seems to him a most appropriate one. In speaking of the methods of opening the maxillary antrum, Dr. Casselberry mentions entering the antrum by way of the inferior meatus as a substitute for what he terms the wide opening through the canine fossa, thus insuring perfect ventilation of the antrum. This condition, in his experience, does more than anything else to bring about recovery from empyema.

Dr. Freer has not found that a resection of the middle turbinate must necessarily accompany the broad opening of the antrum through the nasal wall. Instead of this it has been his, perhaps exceptional, experience commonly to encounter suppuration of the antrum unaccompanied by ethmoidal disease, and it seems to him that resection of the middle turbinal should only be done in those cases of maxillary sinuitis where there is distinct evidence of suppurative ethmoiditis. He believes, with Dr. Richards, that scissors are unsuitable in most cases for the resection of the middle turbinal because of the space they require for the opening of their blades. Where the nasal fossa is normally wide he has no difficulty in rapidly cutting away the bone with the Hartmann-Gruenwald punch as far as is necessary. Where the rarifying osteitis mentioned by Dr. Goodale exists, it is especially easy to extirpate the softened, broad polypoid turbinated body to its limits. There is a class of cases, however, in which the middle turbinal is hidden completely, or all but its anterior border, by a deflection of the septum which wedges it into the most narrow quarters. In these cases unless room is made by a submucous resection, he has found in Moure's spokeshave a help out of the dilemma.

Dr. Packard, he said, refers to a case of gangrenous inflammation following the use of iron perchlorid in the nose, with resulting death from meningitis. The bad practice of attempting to stop epistaxis with solutions of iron chlorid or sulphate is common, and Dr. Freer has seen necrosis of the entire epithelial lining of the nasal interior produced by employing these agents for nose bleed.

In respect to the avoidance of septic inflammation after operations within the nose, it is his experience that the keen-cutting procedures are well borne, while manipulations that fracture, bruise, tear or stretch unduly the intranasal structures are the ones that lead to violent inflammation and the consequent danger of septic complications. The gouty or lithemic diathesis, Dr. Freer said, has been referred to as a definite and proven cause of hyperesthetic rhinitis or vasomotor coryza, the term lithemic rhinitis even being used. In his experience hyperesthetic coryza has not been associated with the acknowledged phenomena of gout and the typical joint inflammations, and he does not think the combination common, as it certainly would be if the uric acid diathesis were an active factor in producing so frequent a disease. The only way to prove the existence of a lithemic rhinitis, he thought, would be by means of blood tests showing the accumulation of uric acid in the blood just preceding and at the beginning of an attack of rhinitis, which is typical of the well-known attacks of gouty joint disease. The presence or absence of uric acid in the urine proves nothing. For those who wish to read a review of the subject he referred to Dr. Lewellys Barker's "Truth and Poetry About Uric Acid," which appeared in editorial form in THE JOURNAL in 1905, and is issued by the American Medical Association as a bound book.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and methods of treatment for the diseases seen especially in every-day practice. Contributions will be welcomed from our readers.]

Intestinal Antiseptics.

Since it has been shown by investigation that intestinal putrefaction occurs under ordinary conditions of health to only a very small degree, but is present in certain diseases to a very marked extent, it is rational to conclude that it may be responsible for some of the toxic symptoms exhibited in these diseases and that it is a proper object of therapeutics to attempt to control it. It is not necessary to enumerate the conditions which have been attributed with greater or less reason to the formation of poisonous or noxious substances in the intestine, but it may be shown how conditions in the intestines can be changed to obviate the continuance of putrefaction. Putrefaction may be due to the action of germs normally inhabiting the intestine, or to foreign germs, some of which may possess specific pathogenic properties. Putrefaction always results from the decomposition of albuminous food material or the abnormal products of disease (mucus, pus or blood), which have found their way into the intestinal canal. Under exceptional circumstances, such as acute or chronic failure of the digestive process in the stomach, retention of food in the stomach, or the introduction of a great mass of imperfectly masticated food already in the process of putrefaction, this process may begin or be continued in the stomach, but usually it does not begin until the lower part of the ileum is reached.

Under normal conditions, Nature does not secure complete absence of germs from the intestinal canal, but maintains a sort of frontier guard of intestinal bacilli which hinder the growth of foreign germs accidentally introduced and themselves subsist on the carbohydrates, forming comparatively harmless acid products which are further of use in preventing the action of putrefactive germs. It is not necessary, therefore, to seek for drugs which will suppress all bacterial action in the intestine, but simply to find some agent which will assist in restoring the normal balance of microbic activity in the intestinal canal.

The first remedial measure for intestinal putrefaction is one which is often resorted to by the *vis medicatrix naturæ* and consists in the removal of the putrefying mass with most of the offending germs by diarrhea or active catharsis. In imitating Nature in this matter the best cathartic to choose is calomel, which is partly converted into corrosive sublimate, which also exerts an inhibiting influence on the growth of the organisms remaining in the intestine after most of its contents have been evacuated. The time-honored custom of following the calomel by a saline has a justification in the further washing of the intestine. It was formerly supposed that the water to dilute saline laxatives, when administered by the mouth, was derived from the blood through the intestinal wall, but recent investigations on the stomach according to the method of Pawlow show that when solutions of salts are introduced into the stomach they must be diluted to about the molecular concentration of the blood before they can enter the duodenum. If this is true it would appear to be best to administer the water with the saline when a rapid operation can be expected. Common salt given in this way forms a rapidly acting and effective cathartic.

A small teaspoonful of table salt is dissolved in a glass of cold water and a few drops of lemon juice added. This is swallowed and followed immediately by another glass of cold water. The patient should not remain in bed after the draught, which usually acts thoroughly as a cathartic in a short time.

The cleansing of the intestinal canal should be followed by limitation and regulation of the diet. To prevent putrefaction the food should be sterile that it may not introduce any foreign germs; liquid or very finely divided in order that it may not afford opportunity for the growth and proliferation of germs before it can be dissolved and prepared for absorption by the digestive fluids; and it should contain no proteids or very little proteid constituents so that there may be as little food for the putrefactive organisms as possible. In acute cases lemonade and sterilized buttermilk will come as near fulfilling these conditions as any diet that can be given. If conditions are less urgent a milk diet has been found to be of great service in suppressing intestinal putrefaction. Next to this come bread and milk, bread and butter, and puddings or other preparations containing starch in such form that it may serve to guard the proteids from decomposition.

The general principle of dietetics for intestinal putrefaction should always be kept in mind, viz.: The proteids should be small in quantity, easily digestible and absorbable, and should be associated with sufficient carbohydrates to bear the brunt of the microbic attack and to protect the proteids from putrefactive decomposition.

It is folly to give medicinal antiseptics before the putrefying

mass has been removed and the intestinal contents reduced to their smallest volume compatible with health. When this has been done the intestinal antiseptics find their proper place and it is an important question what remedies best fulfill the conditions of effectiveness, safety and convenience of administration. We may give these remedies with two objects: (a) To restrain or to prevent the putrefaction of the food during its stay in the intestine; (b) to exert an antiseptic action on the wall of the intestine itself. For the first object we have only to mix with the food an antiseptic in sufficient proportion to inhibit putrefactive action which often occurs with minute quantities of the medicinal agent. Salicylic acid will check fermentation in the proportion of 1 part in 2,000, and formalin and mercuric chlorid in much smaller proportion. These amounts, while apparently minute, become considerable when we remember the amount of chemical material necessary to protect the entire food from fermentation. Thus at 1 in 2,000, 0.5 gm. (7½ grains) would be required for a liter (quart) of milk. This requires doses which may be of little consequence when taken for a few doses only, but which must be taken into account as to their constitutional effect if they are to be taken for a considerable length of time. It is evident that while using intestinal antiseptics with the food the attempt should be made to keep the fermentable or putrefiable portion of the food as small in bulk as possible. It will be of little service to attempt to increase the specific gravity of liquid food above that of the blood, because the stomach will dilute it until it reaches that figure before it is allowed to pass into the intestine.

Intestinal antiseptics should possess the following properties. 1. They should be non-poisonous in the doses in which they are efficient as antiseptics. 2. They should be capable of mixing more or less thoroughly with the intestinal contents. 3. They should not be readily absorbed. 4. They should be soluble enough to yield their antiseptic constituents, but not so soluble as to be readily separated from the mass of the intestinal contents.

A number of agents have shown themselves effective in these respects and have been recommended for this purpose. Clinical experience has shown that they are useful in certain diseased conditions, but it must be admitted that our knowledge does not afford the data for a precise comparison and determination of their relative value.

Bismuth compounds, while generally insoluble, are not so insoluble that they do not enter the circulation when given by the mouth; the bulk of an ordinary or large dose is excreted with the feces in the form of bismuth sulphid or as a suboxid. They are so heavy as to separate somewhat readily from the food and coat the mucous membrane, but of late they have been given mixed with food for experimental and diagnostic purposes, and the results of these experiments indicate that we may expect the mixture of these compounds with food to continue throughout the greater part of the intestinal canal. These salts have been shown to possess antiseptic properties and clinicians seem to agree that the salicylate presents no manifest advantages over the other salts of the metal. The great advantage of the bismuth compounds is that they may be given in large doses without harm, and in case of diarrhea are serviceable by their astringent properties as well as by producing antisepsis.

Bismuth compounds are best given in powder form and after meals, so that the powder may mix with the food. If we wish especially to affect the mucous membrane the medicine may be given before the meal. The purity of the bismuth should be assured, as impure samples are likely to contain sufficient arsenic to act as a poison if given in large doses.

Yeo, "Manual of Medical Treatment," 229, recommends the following as suitable for children:

℞. Bismuthi subnitratis .....3ss 2|
Cretæ preparatæ .....gr. xviii 1|2
Sodii bicarbonatis.....gr. xii |8
Pulveris tragacanthæ comp.....gr. xx 1|3

Misce et divide in pulveres sex. Sig.: A powder in a dessertspoonful of thin arrowroot every three or four hours. Half this dose may be given to infants and very young children, and twice the dose of older ones.

Thompson recommends:

℞. Bismuthi subgallatis.....gr. xx 1|3
Misturæ cretæ .....ʒss 15|

M. Give a similar dose once in two hours.

Phenyl salicylate (salol) is second in popularity as an intestinal antiseptic to the bismuth salts. It is decomposed somewhat slowly in the intestines, and its constituents may be absorbed in such quantity as to produce symptoms of poisoning. The injurious action of both its constituents, salicylic acid and phenol (carbolic acid) on the kidneys should always be borne in mind in its administration. One objection holds against salol, viz., that a considerable part of the dose must be absorbed from the upper part of the intestine so that it can not be expected to act as efficiently in the lower intestine as in the upper. Nevertheless, for the treatment of acute diarrhea, in which putrefaction of the intestinal contents may come most prominently into play salol is recognized as one of the most useful remedies. The action of salol as an antiseptic is to be credited to the phenol liberated, as the salicylic acid is transformed into sodium salicylate, which has little antiseptic power. From experimental evidence it seems to be an established fact that phenol is antiseptic in the proportion of 1 part in 1,000 (Park), so that a dose of from 1 to 2 gm. of salol (15 to 30 grains) would be needed for the antisepsis of a liter of food. The value of salol would appear, therefore, to be greatest in the period when little food is taken and we wish to affect the comparatively small amount of intestinal contents remaining after catharsis has removed the bulk of the offending material.

Salol may be combined with bismuth:

℞. Bismuthi subnitratis .....ʒii 8|
Phenylis salicylatis .....ʒi 4|

Misce et divide in pulveres No. xii. Sig.: Give one powder once in three hours.

Yeo recommends:

℞. Phenylis salicylatis |
Bismuthi subsalicylatis |
Sodii bicarbonatis, ää.....ʒiiss 10|

Misce et divide in pulveres No. xxx. Sig.: One powder to be taken before food twice or three times a day.

Beta-naphthol is a substance that appears to fulfill the conditions required of an intestinal antiseptic to an exceptionally high degree. Experimental results regarding its antiseptic power are somewhat at variance, Bouchard and Maximovitch having found that about 1 part to 5,000 (3 grains to a quart) will arrest putrefaction, while the experiments of Surveyor and Harley indicate that naphthol is less active as a germicide than is bismuth subnitrate. It is very slightly poisonous so that large doses can be given; it is soluble enough to act as an antiseptic and insoluble enough to act throughout the entire intestinal tract. Excellent clinical reports regarding its usefulness have been given, but it appears to have fallen in the estimation of the profession.

Beta-naphthol may be given in combination with bismuth compounds and it is not clearly evident why this mixture should not be as efficient as the proprietary synthetic which consists of a combination of beta-naphthol and bismuth that is broken up into its constituents in the intestine.

℞. Beta-naphthol |
Bismuthi subnitratis, ää.....ʒii 8|

Misce et fac pulveres No. xxx. Sig.: Take one powder once in three hours.

The following is credited by Yeo to Prof. W. W. Johnston:

℞. Benzo-naphthol .....gr. ii |13
Bismuthi subsalicylatis.....gr. v |32
Resorcinol .....gr. ii |13

M. et ft. pulv. Sig.: One such powder every three hours.

The phenolsulphonates (sulphocarbolates) have been highly extolled as intestinal antiseptics, but little definite information is available. They are generally rated as inefficient or of doubtful efficacy and seem to take an inferior position in the estimation of clinicians. It is claimed that in combining with the sulphuric acid the phenol has lost much of its toxicity, but has parted with its antiseptic power as well.

It is stated by most pharmacologists that zinc phenolsul-

phonate, as well as the sodium salt, is best given in solution. We may prescribe:

℞ Zinci phenolsulphonatis 3ss 2
Aquæ menthæ piperitæ.....℥ii 60
M. Sig.: Take a teaspoonful once in three hours.

℞ Sodii phenolsulphonatis 3i 4
Elixir aromatici .....℥ii 60
M. Sig.: Take a teaspoonful once in three hours.

Guaiacol, which is the chief constituent of creosote, shares the antiseptic properties of the latter substance. Its exact place as an intestinal antiseptic is hard to define since it has been almost exclusively used in phthisis, a condition in which intestinal antisepsis plays a secondary rôle in the indications for treatment. It is probably inferior to salol and one objection to it is the rapidity with which it is absorbed from the intestinal canal.

Sulphur has some popular reputation as an antiseptic, but precise data as to its action are wanting. Given as an intestinal antiseptic, its action would probably be subsidiary and adapted to chronic rather than to acute cases. It is converted slowly into alkaline sulphids which may exert an antiseptic action.

The second object of intestinal antisepsis, viz., the disinfection or antisepsis of the intestinal wall itself, is unfortunately impractical with our present resources. The bacteria hidden in the wall of the intestine, surrounded by mucus or actually imbedded in the pathologically altered mucous membrane, can not be reached by an antiseptic from the lumen of the intestine, and if we try to affect them through the blood the dilution of the antiseptic agent is such that it can no longer act in that way. We can not hope to affect the essential lesions of colitis, typhoid fever, dysentery, tuberculosis, etc., by intestinal antiseptics, but these agents may be of service in reducing the production of toxins by putrefaction, which is greatly favored by the conditions present in these diseases.

Medicolegal

About Opinions of Non-Experts as to Sanity.

The Supreme Court of Wisconsin says, in Duthey vs. State, that hardly any question of mere practice is so clouded by an indigestible mass of rulings, dicta, and decisions as that of the admissibility of opinions of non-experts as to sanity. A little consideration of the reasons why anything more than evidence of the actual physical facts observed by the witness should be allowed to be stated would greatly aid courts and counsel in this field. First, it is obvious that one not an expert can no more aid the jury by an expert opinion as to sanity than any other fact or condition. If all the physical facts can be stated, the jury are as competent to form an opinion as the witness, and their province ought not to be invaded. But all experience teaches the frequent, if not general, impossibility of stating all things which the eye and ear note in an interview with another, the wildness of the eye, the incoherence of the ideas in speech, hurried or erratic manner, and the like. Ordinarily it is impossible for the narrator either to remember the specific acts, words, and gestures or adequately to describe them so as to convey to his hearer their significance to the real information desired, namely, the mental state, without stating that they were excited, incoherent, unreasonable, unusual, or the like, all of which is but statement of conclusion or opinion. Hence the rule has grown that the ordinary observer may so state his impression of his interview.

Courts have seemingly been unable to express verbal distinctions between the mere statement by a witness as to the impression on his mind of certain acts narrated as fully as he can and a declaration of opinion generally that the person was sane or insane, and a direct inquiry as to such opinion is now sanctioned by the weight of authority, with which the expressions in the decisions of this court agree. The subject received lucid treatment at the pen of Harlan, J., in Conn. Ins. Co. vs. Lathrop, 111 U. S. 612, which case presents ideal illustration of the best manner of propounding the proper question to the witness. After a conversation had been narrated, the manner described as agitated, face flushed, and expressionless the question was propounded, substantially, "What impression was made on your mind by the conduct, actions, manner, expressions, and conversation which you observed?" This was fully approved.

In this case the state called the jailor who received the defendant into custody, and first proved by him that he had a large experience as jailor in dealing with insane people, such as were committed to his custody; also that he had a certain limited conversation with the defendant after his arrest a few hours after the shooting, and he was then asked: "From your knowledge gained from such observation and care of those people and from Duthey's actions, conversations, and manner and appearance as you saw him at the jail Saturday night, September 23d, and as you testified here, would you say he was sane or insane? Answer: Sane." The question here was inaccurate and improper, in that it directed the witness to base his opinion as to the defendant's general sanity, in part at least, on what he had observed in others committed to him for incarceration and custody as too dangerously insane to be at large. It also obviously presented an insidious attempt to dignify the jury the witness' opinion as that of an expert, instead of a mere lay observer, by reason of his frequent contact with insane persons.

Injury to Person with Stricture of Urethra.

The Supreme Court of New Mexico says, in City of Roswell vs. Davenport, a personal injury case brought by the latter party, that it appeared that he was afflicted with a stricture of the urethra; that, while walking along a sidewalk, a loose board flew up and struck him on the left side of the penis and left groin; that in an hour and fifteen minutes after the accident he experienced a retention of the urine which was not relieved for 34 hours, owing to objections of his family and friends; that as a result of his injuries he was ill for six months. It was contended that his injury was not the proximate result of the city's negligence, but was the result of an independent, intervening cause, or causes, viz., the stricture of which he was suffering and the retention of the urine. But no question was raised by the city as to the delay in relieving the retention of the urine, and perhaps none could be; there being no findings as to his having delayed the operation by the surgeons. It was clear, therefore, that the city's contention as above was untenable; and a judgment for $2,000 damages is affirmed. It has almost universally been held that an injury suffered by the negligent act of another is the proximate cause of the effect produced, notwithstanding the person injured may have been suffering at the time from disease which aggravated the consequences of such injury.

Representative May Waive Privilege in Nebraska.

The Supreme Court of Nebraska holds, in re Parker's Estate, that the provisions of the Code of that state against the disclosure of confidential communications may be waived by the party in whose favor they were enacted, and the privilege of waiver extends to the personal representative of a deceased person.

Leaving Child with Wet Nurse of Bad Character.

The Supreme Court of South Carolina says that in the case of Brown vs. Robertson a Salvation Army officer sought by habeas corpus proceedings to take a child about one year of age from a negro woman of alleged bad reputation and character with whom it had been placed by its parents and a physician to be wet nursed. This court, however, does not think any abuse of discretion was shown in the refusal of the trial court to interfere in the case. It says that it naturally excited sympathy and regret that the child was left in such surroundings, especially when the mind adverted to the circumstances which might hurtfully influence its future welfare if left with such custodian for any great length of time. But it must be remembered that the child was where the parents and the physician in charge had placed him, not abandoned, but to be wet nursed, and that there was nothing to show that the child had suffered from any neglect in this regard. The moral and social considerations so stren-

uously urged would no doubt become more and more weighty and serious as the child became more susceptible to their influence, and if the time had not already arrived, it would soon arrive, when the court might be called on to remove the child into better surroundings, if those in charge of his welfare neglected their duty in this regard.

Emergency Services for Non-Resident Poor Person.

The Supreme Court of Wyoming says, on the appeal of Board of Commissioners of Sheridan County vs. Denebrink, that this was an action brought by the latter party, a physician, to recover $75 for medical and surgical services rendered to a non-resident person who had fallen sick in that county from an accident, namely, having his left arm run over by a railway train, and who was without any money or means to pay therefor. Section 1,260 of the Revised Statutes of Wyoming of 1899 provides that when any non-resident of that state, or any other person not coming within the definition of a pauper, shall fall sick in any county in the state, not having money or property to pay his board, nursing or medical attendance, the county commissioners, on notice thereof, shall provide such assistance as they may deem necessary, by contract or otherwise, etc.

It was urged here that no notice had been given to the board of county commissioners, and that the services were not performed by the request of the board, or of any one having authority to bind the county. But, the board not being in session at the time of the accident, it was reasonable to presume that notice could not have been given to the board of the condition the man was in until long after the possibility of saving his life had passed. The case was one of emergency, so alleged and conceded, requiring prompt action, and the plaintiff took charge of the patient for the purpose of amputating, and he and his assistant did amputate, the arm, and all of which was necessary to save the life of the injured man, and all of which was done with the knowledge and consent of the sheriff, one of the duly-appointed agents of the county to oversee and provide for the poor and indigent of said county.

It was urged, however, that the agent was such for a restricted purpose, and that his authority extended only to the poor and indigent residing within the county, and that he had no authority to act or bind the county in cases coming under section 1260. Such, undoubtedly, is a correct interpretation of the statute; but the liability of the county arises in such cases by reason of the failure of the county to furnish a physician when the exigencies of the case requires immediate surgical and medical treatment. The amputation was done in order to save the life of the injured man. The services were urgent, imperative and admitted of no delay. The board was not in session, and there was no opportunity to notify it, or for it to take action, until it reconvened. The provision in such cases, that "the county commissioners on notice shall provide such assistance as they may deem necessary," is purely one of regulation in view of the attending circumstances in each particular case, and does not make one a volunteer merely who out of a spirit of humanity in an emergency case furnishes succor until the proper authorities can act in the premises. The liability and duty to care for the non-resident sick is statutory, and exists by reason of their condition.

The legislature evidently intended this class of cases should be attended to, yet it has failed to point out the method of giving prompt assistance in an emergency case. In such case the object, purpose, and policy of the law is clear, and, although the statute is silent as to the method of giving speedy and needed relief, its object and purpose ought not for that reason to be defeated.

This case fell within the exception that the request of the board was necessary for contract liability. To hold that such request was necessary to maintain the action would, under the circumstances as shown in the petition, be inhuman and shocking to all sense of decency, and render the statute less effective than it was evidently intended. Therefore the court holds that a demurrer interposed to the petition was properly overruled.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

June 8.

1 *The American Medical Association, Its Aims and Interests. J. D. Bryant, New York.
2 *The Eustachian Tube, Its Anatomy and Movements. W. S. Bryant, New York.
3 Leprosy in the Philippines and the Present Method of Combating the Disease. V. G. Heiser, Manila, P. I.
4 *A New Blood Test. M. Einhorn, New York.
5 Effects of Spirit and Drug Taking on the Upper Air Passages. T. D. Crothers, Hartford, Conn.

1.—This article appeared in full in THE JOURNAL, June 8, 1907, page 1909.

2. **Eustachian Tube.**—Bryant gives a minute description of the anatomy of the Eustachian tube, and concludes that the physiologic function of ventilating the tympanic cavity is accomplished mainly by the dilator or levator palati muscle. The mechanism which allows of the opening of the tuba auditiva is the backward pressure of this muscle on the angular process of the alar cartilage, which swings backward, upward and inward on its superior attachment, dragging with it the floor of the tube and forming a triangular ostium.

4. **New Blood Test.**—Einhorn's test consists of testing with paper sensitized by the use of benzidin. The paper is immersed in the solution to be examined and a few drops of peroxid of hydrogen are added, a blue color is formed, if blood is present. The blue or green color appears in a few seconds, and we should not wait more than a minute for the reaction to appear, as after that the color may appear from the presence of other substances than blood. Hydrochloric acid may cause the reaction after two or three minutes. The benzidin test may be recommended as a preliminary test; a strong reaction or no reaction at all gives a reliable test.

New York Medical Journal.

June 8.

6 Deformities of Penis Due to Syphilis, Gonorrhea and Other Causes. R. W. Taylor, New York.
7 *Weak Foot and Its Treatment. C. R. Keppler, New York.
8 *Open-Air Treatment of Tuberculous Bone and Joint Disease. J. Carling, New York.
9 *Rare Forms of Hernia. G. T. Vaughan, Washington, D. C.
10 The Illegitimately Pregnant Woman from a Socio-economic Standpoint. L. T. Royster, Norfolk, Va.
11 Amyotrophic Lateral Sclerosis with Bulbar Onset. A. Gordon, Philadelphia.
12 *Case of Eyestrain Mistaken for Appendicitis and Cholelithiasis. E. M. Alger, New York.

7. **Weak Foot.**—In the treatment of weak foot, Keppler devised as a prophylactic measure the wearing of correct shoes, and as a corrective employment of active exercises, manipulation of the foot, manual and instrumental, and as adjuvants, massage, electricity and vibration, hot foot baths, and such medication as is indicated. He says that the making of a correct brace at the correct time can not be too strongly emphasized.

8. **Open-Air Treatment of Tuberculous Bone and Joint Disease.**—Carling's paper advocates very warmly the open-air treatment of tuberculous bone and joint disease, and emphasizes the fact that it is the duty of municipal authorities to establish and to maintain open-air sanatoria for the treatment of tuberculous children of the tenements.

9. **Rare Forms of Hernia.**—Vaughan reports a case of superficial inguinal hernia of the right side. The displaced testis had come through the external ring and then had passed upward between the external oblique muscle and the superficial fascia. This was a congenital hernia. In another case, occurring in an old man, the bladder formed the herniated mass. A third case reported was one of properitoneal direct inguinal hernia, which came near to becoming an obturator hernia, but instead of passing through the obturator foramen, it passed on upward, to appear at the external ring above the pubes.

12. **Eyestrain Mistaken for Appendicitis.**—In the case reported by Alger, the chief symptom was chronic, severe abdominal pain, of several months' duration, which was com-

pletely relieved by glasses. Three years later the patient lost his glasses, and the pain immediately returned. It was again relieved by the wearing of glasses. Two surgeons had diagnosed the pain as that of appendicitis and cholelithiasis, respectively.

Boston Medical and Surgical Journal.

June 6.

13 *The American Medical Association, Its Aims and Interests. J. D. Bryant, New York.
14 *Coincident Extrauterine and Intrauterine Pregnancy. E. B. Young, Boston.
15 *Bier Suction Treatment of Tubercular Sinuses. J. W. Sever, Boston.
16 Physician's Responsibility in the Training of Infants. A. C. Eastman, Southborough, Mass.
17 *Treatment of Rigid Flatfoot. Excision of Scaphoid. A. T. Legg, Boston.
18 Treatment of Chronic Antrum Disease. R. H. Johnston, Baltimore.

13.—This article appeared in THE JOURNAL, June 8, 1907, page 1909.

14. **Coincident Extrauterine and Intrauterine Pregnancy.**—Young reports a case occurring in a young woman, in which one fetus was removed from the uterine cavity and another from the right Fallopian tube.

15. **Bier Treatment of Tubercular Sinuses.**—Sever advocates the routine employment of Bier's suction treatment, combined with compression, in every sinus case, whenever it is applicable. He reports 16 cases; 8 patients were either wholly healed or markedly improved; in 5 the conditions were not apparently improved locally, but there was a distinct gain in weight, and 3 patients lost ground to such an extent that the treatment had to be omitted. The cases treated were cases of Pott's disease, tubercular knee and hip, and osteomyelitis affecting various bones.

17. **Treatment of Rigid Flatfoot.**—Legg advocates excision of the scaphoid, in the treatment of rigid flatfoot, according to the method of Davy and Bird. The operation is a simple one, consisting of a curved incision over the scaphoid, the convexity being directed downward. After turning back the skin and soft parts, the scaphoid is grasped with lion forceps and enucleated by freeing its articulations with the tarsal bones. After the removal of the scaphoid, the foot is corrected and put up in plaster in the corrected position. In the majority of cases operated on by Legg, he has sutured the remaining joint capsule of the head of the astragalus to that of the internal cuneiform in order better to hold the corrected position. The tendons of the peronei, and in some cases the tendons of the tibialis anticus, extensor proprious hallucis and extensor longus digitorum should be divided in order fully to correct the valgus. The after treatment in these cases is of great importance. The foot should be kept in plaster for from three to four weeks, being sure the foot is held in the corrected position. The plaster may then be omitted and the patient allowed to wear a shoe, holding the position of the foot by a properly fitting plate. The patient may have to use crutches for a week or so after the omission of the plaster on account of the pain from the recent operation and in order to become accustomed to walking on a foot in a new position. Massage, manipulation and exercises designed to strengthen the foot are of great benefit in the after treatment. The plates may be ommited in from five to six months.

St. Louis Medical Review.

June 1.

19 Hemoptysis. J. B. Huber, New York.
20 Renal Calculi and Incrustation of Kidney Pelvis with Gravel. H. Jacobson, St. Louis.
21 Augustus Charles Bernays. W. Bartlett, St. Louis.

Lancet-Clinic, Cincinnati.

June 8.

22 Inversion of the Uterus. J. A. Johnston, Cincinnati.
23 Rights of the Unborn Child. W. Gillespie, Cincinnati.
24 Treatment of Tuberculosis. N. I. Fraid, Cincinnati.

Surgery, Gynecology and Obstetrics, Chicago.

May.

25 *Endothelioma of Ovary. C. W. Barrett, Chicago.
26 *Surgery of Liver. T. S. Cullen, Baltimore.
27 Treatment of Extensive Cystocele and Uterine Prolapse. A. Dührssen, Berlin, Germany.
28 Newer Methods in Diagnosis of Kidney Diseases. G. Kapsammer, Austria.
29 *Lymphatic Glands in Pregnancy. A. W. Meyer, Baltimore.
30 *Symptomatology and Diagnosis of Acute Pancreatitis. A. Egdahl, Iowa City, Iowa.
31 *Dysmenorrhea as Symptom of Abnormal Pelvic Conditions. G. R. Holden, Jacksonville, Fla.
32 *Valvular Disease of Heart Complicating Pregnancy and Labor. F. S. Newell, Boston.
33 Stricture of Urethra in Male Children. V. F. Marshall and E. Quick, Appleton, Wis.
34 Perineal Lacerations. F. Hinchey, St. Louis.
35 Cervical Fistula Following Suppuration in Patent Thyroglossal Duct. M. G. Seelig, St. Louis.
36 Bier's Method of Anesthesia. J. Sandberg, Bergen, Norway.
37 Syphilis as a Cause of Stomach Disease. F. D. Bird, Melbourne, Australia.

25. **Endothelioma of Ovary.**—Barrett reviews all the cases of endothelioma of the ovary recorded in the literature, and reports one case of hemangio-endothelioma perivasculare observed by him. He presents the following conclusions: 1. Less confusion will prevail if the endothelioma is considered a separate class of tumor. 2. Such a classification has justification in the histogenesis, morphology, and arrangement of the cells. 3. The tumor can not be made to conform to sarcoma or carcinoma. 4. Endothelioma should be divided into three varieties, as suggested by Amann, rather than two as suggested by Cullen and Eckardt, or five, as suggested by Hansemann, to correspond with their three origins. 5. Endothelioma of the ovary has a high mortality if operation is delayed. 6. Patients should be educated to seek earlier relief for pelvic conditions. 7. On account of the tendency of the uterus to become involved and the growth to return in the opposite ovary, the advisability of their removal at the time of removing a malignant tumor of the ovary should be seriously considered.

26. **Surgery of the Liver.**—Cullen reports a series of liver cases, in which it was necessary to remove a segment of the liver, or to suture torn areas. He employs a needle that is almost flat and very slender, making a very small hole in the liver substance. It is a modified Kousnietzoff needle.

29. **Lymphatic Glands in Pregnancy.**—Meyer records his observations made on 59 patients, with reference to the palpability of the lymph glands during pregnancy. The axillary and inguinal glands were palpable in 98.3 per cent. of all cases; the submaxillary in 74.6 per cent.; the supratrochlear in 30.5 per cent.; the posterior auricular in 10.1 per cent. In negro women the glands were found larger and oftener became enlarged. No new formation of lymph glands was observed.

30. **Acute Pancreatitis.**—Egdahl discusses the symptomatology and diagnosis of acute pancreatitis, basing his remarks on a review of 107 cases recorded in the literature, and the observation of one personal case.

31. **Dysmenorrhea as a Symptom of Abnormal Pelvic Condition.**—Holden analyzed the histories of 1,000 consecutive cases, with reference to the occurrence of dysmenorrhea, in abnormal pelvic conditions. As the result of his observations, he presents the following conclusions: 1. Dysmenorrhea is present in 47 per cent. of all gynecologic hospital patients. 2. In about 23 per cent. of the entire number, it seems to be definitely caused by certain abnormal conditions of the pelvic organs. 3. In 22 per cent. of the entire number, it is present in conjunction with such conditions, but is apparently not caused by them. 4. The pathologic conditions which are most frequently seen as the causes of dysmenorrhea are: 1, Retrodisplacements of the uterus; 2, pelvic inflammatory disease; 3, myomata. These three conditions account for nearly 90 per cent. of all the dysmenorrhea which is caused by pathologic conditions of the pelvic organs. Retrodisplacement accounts for 41 per cent., pelvic inflammatory disease for 37 per cent., and myomata for 11 per cent. 5. Of nulliparous patients with retrodisplacements causing symptoms, 86 per cent. have dysmenorrhea. The frequency of association leads to the conclusion that the abnormal position causes the dysmenorrhea. In the retrodisplacements occurring after childbirth, it is much less common; 25 per cent. of multiparæ with retrodisplacements have dysmenorrhea, which is apparently caused by the malposition. 6. Of all the patients with pelvic inflammatory disease, 31 per cent. have dysmenorrhea which is apparently caused by the condition. 7. Of all the cases of

myoma, 20 per cent. have dysmenorrhea apparently caused by the tumor.

32. **Valvular Disease Complicating Pregnancy.**—Newell says that any organic heart lesion, even if perfectly compensated, under normal conditions of life, should arouse apprehension and call for constant watchfulness, if pregnancy supervenes. If pregnancy comes as a complication, when the heart lesion is imperfectly compensated, the indication is for immediate relief by emptying the uterus. This should also be done when a previously well-compensated heart fails, and compensation can not be restored by appropriate treatment.

Journal of Experimental Medicine, New York.
May 25.

38 *Experimental Vascular Lesions Produced by Bacillus Mallei. C. W. Duval, Montreal.
39 *Electric Charges Carried by Hemolysins. O. Teague and B. H. Buxton, New York.
40 *Results Obtained by Injection of Placenta into Animals of Same and Different Species. R. T. Frank, New York.
41 *Nature of Antitetanic Action of Eosin. H. Noguchi, New York.
42 *Local Immunity to Tetanus in Inoculated Rats Treated with Eosin. H. Noguchi, New York.
43 *Physiologic and Pharmacologic Studies of Magnesium Salts. S. J. Meltzer and D. R. Lucas, New York.
44 Influence of Salicylic Acid on Uricolysis. L. B. Stookey and M. Morris, Los Angeles, Cal.
45 *Function of Posterior Spinal Ganglia. S. P. Kramer, Cincinnati.
46 *Pathogenesis of Gallstones. S. P. Kramer, Cincinnati.

38. **Experimental Vascular Lesions.**—In studying the histologic lesions of glanders, Duval was impressed with the nature and regular occurrence of vascular changes that occurred following the injection of the *Bacillus mallei* and its poisons. The animals used were full-grown rabbits and guinea-pigs. He claims that the vascular lesions in experimental glanders afford an excellent opportunity of studying the early changes in the intima and media in experimental arteriosclerosis. Not only are regenerative changes produced, but lesions of an exudative and proliferative character. These proliferative and degenerative vascular changes are analogous to the vascular lesions caused by subacute glanders in man. The most common site of the lesions, both in animals and man, is the peripheral vessels, and especially the smaller visceral arteries. The type of the lesion seems to depend on the virulence of the culture, the sex of the animal, and the degree of acquired immunity. In subacute human glanders, and in experimental animal glanders, the vessels primarily react by the endothelium of the intima proliferating. The first degenerative changes in such cases occur in the innermost layer of the media, and not in the so-called middle zone. This is apparently due to the interference with the nourishment of the circular muscle fibers of the media, by proliferation of the endothelium of the intima.

39. **Electric Charges Carried by Hemolysins.**—Field and Teague have found that toxins and antitoxins (diphtheria and tetanus), tetanolysin and antitetanolysin, and typhoid agglutinin travel toward the cathode. The experiments outlined by Teague and Buxton show that hemolytic amboceptors, hemoagglutinin and probably, also, complement travel toward the cathode, so that apparently all the active substances in serum concerned in antireactions are alike in this respect.

40. **Injections of Placenta into Animals of Same and Different Species.**—Frank's investigations were made to determine experimentally whether actual proof could be found that the placenta (chorioepithelium) exerts a specific influence, trophic or otherwise on the maternal organism. Two methods were used: One consisted of the injection of placental tissue in the females of the same species, followed by examination of the generative organs; the other, the injection of placenta tissue into animals of the same or of other species, with the object of producing a specific biologic reaction. As a result of his experiments, Frank concludes that the injection of rabbit placenta into rabbits produces no isoprecipitins; that placental injections into animals of the same species caused no changes in the generative organs; that the injection of human placental nucleoproteid does not produce an antiserum, but acts merely as mild toxic agents. The injection into rabbits of the human placenta made nearly blood free produces a weak "human reaction," which can be demonstrated by the reaction for precipitin, deflexion of complement, agglutinin and hemolysis. No specific placental reaction could be shown. He feels justified in stating that no experimental proof of a specific placental immune reaction can be demonstrated at present.

41, 42. **Action of Eosin.**—Noguchi briefly refers to the previous work by Flexner and himself on the influence of certain photodynamic anilins on experimental tetanus and reports further experiments by himself on the nature of the antitetanic action of eosin. His conclusions follow: Eosin prevents germination of tetanus spores, when its concentration (in glucose bouillon) reaches 0.2 per cent. When the concentration of eosin decreases to 0.01 per cent., germination of the spores is no longer inhibited. When the eosin concentration increases to 0.001 per cent of eosin, vegetation and multiplication of the bacilli become more active and new spores are not formed, even after long intervals of time. In concentrations of 0.003 per cent. eosin prevents perfect segmentation, so that long and convoluted threads are produced. The spores which are formed in a medium containing 0.01 per cent. of eosin are often situated at the center and not at one pole of the bacilli. Eosin in 2 per cent. solution destroys vegetative bacilli in 15 minutes and in 0.1 per cent. solution in 24 hours. Exposure to sunlight greatly hastens the bactericidal effect in the latter dilution. Eosin in high concentrations is not capable of killing tetanus spores, even after long exposure to sunlight (30 hours). The toxin production of tetanus bacilli grown in eosinized culture media diminishes as the concentration of the eosin increases. The toxin-producing power and the virulence of tetanus bacilli are not permanently modified by contact with eosin for a long period or by successive cultivation in eosinized medium. Eosin is likewise capable of restraining the vegetation of tetanus spores in the normal body. In spore threads inserted beneath the skin of rabbits surrounded with eosin in solution, a very restricted vegetation takes place. If the injections of eosin are repeated, vegetation soon ceases and the bacilli degenerate and disappear. Tetanus spores remain latent indefinitely in the healed wound beneath the skin. These spores do not lose their power to grow outside or inside the body under favorable conditions or to produce toxin.

Noguchi then considers local immunity to tetanus in inoculated rats treated with eosin. He believes that the restricted germination and vegetation which take place in eosin-treated animals produce a small quantity of tetanus toxin, which, acting locally on the tissues, gives rise in them to a degree of immunity. Specific experiments prove the presence of a degree of general immunity in such animals, which in almost all cases is lower than the local immunity. The facts that spore threads in these animals inoculated into the superficial fascia and that the resulting scar tissue was limited to this stratum, led Noguchi to conclude that connective tissue cells and possibly the endothelium of the lymphatics are the cells which yield the antitoxin. Diffusion of the antitoxin from this local area of high concentration into the area of low concentration, i. e., the general body fluids, accounts for general immunity produced.

43. **Magnesium Salts.**—Meltzer and Lucas show that when introduced subcutaneously magnesium salts are eliminated to a great extent through the kidneys and that in nephrectomized rabbits the susceptibility to the toxic action of magnesium salts is increased by about 50 per cent., and that the profound anesthesia of magnesium now may continue for twenty-four hours or longer. Furthermore, magnesium salts in nephrectomized animals have a cumulative effect, so that several small doses produce an effect equal to that of all the doses in a single injection. A dose, which is fatal, immediately after the nephrectomy, causes only anesthesia eighteen hours after the operation, indicating that in the meantime vicarious paths have developed which eliminate part of the salts.

45. **Function of Posterior Spinal Ganglia.**—Kramer in his previous work found that irritation of the central end of the crural nerve produces a fall in blood pressure, but in animals

which were deeply narcotized with ether, in most instances the irritation of the central end of the crural nerve was without effect, either on the circulation or respiration. He now adds the results of more recent work on the effect of stimulating the posterior roots of the spinal nerves. He finds that a degree of irritation which in a given degree of anesthesia is without effect on the circulation or respiration when applied peripherally to the ganglia will, when applied centrally, that is, between the ganglion and the spinal cord, be followed by "vasomotor shock," such as follows irritation of the sensory nerve during incomplete anesthesia. He concludes from this that the spinal ganglion holds back or inhibits the effect of this irritation on its way to the cord and brain.

46. **Gallstones.**—Kramer reviews briefly the various theories in regard to the formation of gallstones, and reports a series of experiments undertaken with a view of throwing light on the subject. He prepared two kinds of culture media: one containing equal parts of bile and ordinary bouillon; the other, equal parts of bile and bouillon plus 1 per cent. cholesterin. The media were filtered and refiltered until perfectly clear. Tubes of these media inoculated with streptococcus aureus showed no change. In tubes inoculated with colon or typhoid bacilli there was a very marked precipitate, increasing in amount with the age of the culture and showing microscopically, besides the bacilli, all the constituents of gallstones—amorphous calcium phosphate, magnesium phosphate, calcium carbonate, biliary coloring matter and crystals of cholesterin (rather numerous in the tubes containing 1 per cent. cholesterin).

From these experiments Kramer concludes "that gallstone formation, just as phosphatic urinary stone formation, is due to a chemical decomposition of the bile, the direct result of the growth of micro-organisms therein." The colon bacillus and typhoid bacillus are the micro-organisms usually concerned, and it is significant that both these produce acid reaction in the media; while the staphylococcus which requires and retains an alkaline reaction, does not cause the precipitation.

Northwestern Lancet, Minneapolis.

May 15.

47 *Cases of Appendicitis, Illustrating Common Mistakes in Diagnosis. A. T. Mann, Minneapolis.
48 Bright's Disease. L. W. Day, Minneapolis.

47. **Mistakes in Diagnosis of Appendicitis.**—Mann describes three series of cases illustrating errors in the diagnosis of appendicitis. The first series included those cases in which the patients presented symptoms of an acute indigestion, and were treated for such; patients who presented symptoms of bowel destruction made up the second series of cases; the third series comprised those cases in which the patient had been supposed to have chronic gastric and intestinal indigestion. The last series, Mann believes, to be by far the most numerous.

Chicago Medical Recorder.

May 15.

49 Opening the Cranial Cavity for Tumors and Evacuation of Circumscribed Infections. J. Frank, Chicago.
50 Specimens Showing Development of Nose in Three Months' Fetus. G. W. Boot, Chicago.
51 *Treatment of Extrauterine Pregnancy. A. P. Heineck, Chicago.
52 Biliary Fistulæ Due to Gall Bladder and Gall Duct Disease. M. R. Barker, Chicago.
53 *Abscess of Mesenteric Lymph Glands. B. Holmes, Chicago.
54 Anatomy of Subphrenic Space. H. O. White, Chicago.

51.—See abstract in THE JOURNAL, March 30, 1907, page 1138.

53. **Abscess of Mesenteric Lymph Glands.**—As one of the rare causes of peritonitis, limited or diffuse, Holmes says that the secondary infection of mesenteric lymph glands with ultimate extension or rupture into the peritoneal cavity must be considered. He says that mesenteric lymphadenitis is an invariable result of disease of the mucosa of the intestinal tract and its adnexa. Suppurative lymphadenitis occasionally occurs as the result of typhoid, ulcerative conditions, such as cholecystitis, appendicitis or other local infections. The rupture of such an abscess may result from trauma or pressure atrophy and initiate a terminal peritonitis. He reports one case observed by him.

Detroit Medical Journal.

April.

55 Diseases of the Nasopharynx in Infancy. J. L. Morse, Boston.
56 Restriction of Smallpox. T. B. Cooley, Ann Arbor.
57 Study of the Infant's Stool. (Continued). P. Seiter, Solingen, Germany.
58 Typhoid Fever in Michigan. F. W. Shumway, Lansing, Mich.
59 Case of Extensive Leucoderma Successfully Treated. N. E. Aronstam, Detroit.

Journal of the Michigan State Medical Society, Detroit.

April.

60 Sanatorium Treatment and Value of State Sanatorium in Tuberculosis. H. J. Hartz, Detroit.
61 Pathology and Operative Treatment of Chronic Suppurative Otitis Media. R. B. Canfield, Ann Arbor.
62 Pharmacopeia Præcox. F. S. Smith, Saginaw.
63 Renal Surgery and Nephritis. W. C. Wyman, Detroit.
64 Ideas and Ideals. F. R. Blanchard, Lakeview.

Colorado Medicine, Denver.

April.

65 The Free Dispensary as a Factor in the Tuberculosis Crusade. A. S. Taussig, Denver.
66 Gastrointestinal Fever in Childhood. H. B. Whitney, Denver, Colo.

Northwest Medicine, Seattle, Wash.

April.

67 Nervous Manifestations of Syphilis. M. Russell, Seattle.
68 Non-venereal Syphilis. F. M. Conn, Seattle.
69 *Gonorrheal Peritonitis in the Male. J. W. Thomas, Seattle.
70 Etiology and Symptomatology of Gastric Ulcer. G. M. Horton, Seattle.
71 Fracture of Anatomic Neck and Resection of Femur. C. A. Smith, Seattle.

69.—See abstract in THE JOURNAL, April 27, 1907, page 1461.

Iowa Medical Journal, Des Moines.

April.

72 Tonsillectomy. F. E. V. Shore, Des Moines.
73 The Physician as a Life Insurance Examiner. P. B. Cleaves, Cherokee.
74 Placenta Prævia. A. E. Cook, Randolph, Neb.
75 Serum Therapy of Tetanus. W. W. Dean, Sioux City, Iowa.
76 Vesicular Mole, Simulating Pregnancy at Full Term. A. M. Avery, Maquoketa.
77 Pneumonia. J. L. Peppers, Goldfield.
78 Therma-Erotherapy. B. Efner-Fell, Moville.

Maryland Medical Journal, Baltimore.

May.

79 Administration of Ether by the Drop Method. S. G. Davis, Baltimore.
80 Dispensary Treatment of Neurasthenia. W. R. Dunton, Jr., Towson, Md.
81 President's Address, Medical and Chirurgical Faculty of Maryland. H. Woods, Baltimore.

Albany Medical Annals.

May.

82 Relation of Tuberculosis to Municipal and Industrial Life. C. Stover, Amsterdam, N. Y.
83 Conditions Resulting from Injuries to Pelvic Floor, and their Prophylaxis. J. A. Sampson, Albany, N. Y.
84 Three Months' Surgical Service at Albany Hospital. E. A. Vander Veer, Albany.
85 Differential Diagnosis of Cerebellar Abscess and Pus in Labyrinth. L. Le Brun, Albany, N. Y.

Medical Standard, Chicago.

May.

86 Fifty Brief Biographic Clinics on Living Patients. G. M. Gould, Philadelphia.
87 Scarlet Fever. W. D. Brode, Chicago.
88 Anatomy of the Sigmoid and Mesosigmoid. B. Robinson, Chicago.
89 Practical Roentgen-Ray Therapy. N. M. Eberhart, Chicago.
90 The Falsetto or Eunuchoid Voice. E. E. Clark, Danville, Ill.
91 Interpreting the Inverted Retinal Image. T. G. Atkinson, Chicago.

Journal of Inebriety, Boston.

May.

92 Influence of Narcotics on Metabolism. W. S. Hall, Chicago.
93 Mental Degeneration the Result of Alcohol. R. Johnson, London.
94 Reformable and Irreformable Inebriates. (Ed.)
95 A Morphiamaniac on Trial for Murder. T. D. Crothers, Hartford, Conn.

Kentucky Medical Journal, Bowling Green.

May.

96 *Cystoscopy: Ureteral Catheterization; Is it Practical? C. L. Wheeler, Lexington.
97 Pleuropneumonia Followed by Pulmonary Abscess. J. G. Cecil, Louisville.
98 Diabetic Gangrene. C. L. Hudgins, Olive Hill.
99 Our County Society. B. G. Allen, Somerset.
100 Apoplexy. H. K. Orsburn, Owensboro.

96.—See abstract in THE JOURNAL, Oct. 27, 1906, page 1402.

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Canadian Practitioner and Review, Toronto.

May.

101 Chemical Changes in the Animal Body. G. Chambers, Toronto.
102 Successful Case of Cesarean Section. H. C. McLean, Guelph, Ont.
103 Acute or Spontaneous Hemorrhages in the New-born. H. T. Machell, Toronto.
104 Medical Thoughts, Facts, Fads and Fancies. J. S. Sprague, Stirling, Ont.
105 Pyelitis Complicating Pregnancy. H. Meek, London, Ont.

Denver Medical Times, Denver.

May.

106 An Orbital Injury. H. C. Brown, Denver.
107 Two Abdominal Cases. M. Hawes, Denver.
108 Thoracic Effusions with Report of Case of Empyema of Unusual Origin. S. Simon, Denver.
109 Oral Asepsis. W. H. Delbridge, Greeley.
110 Sanitary Bathrooms and Insanitary Kitchens. C. J. Fox, Washington, D. C.

Utah Medical Journal, Denver.

May.

111 Epidemic Cerebrospinal Meningitis. F. H. Raley, Salt Lake City.

American Journal of Surgery, New York.

May.

112 Emergency Dilatation of Urethral Stricture. F. C. Valentine and T. M. Townsend, New York.
113 Carcinoma and Calculus of Prostate. G. F. Lydston, Chicago.
114 Abortion, with Special Reference to Incomplete Abortion. A. R. Small, Chicago.
115 Blood Examination in Surgical Diagnosis. (To be continued.) I. S. Wile, New York.
116 Drainage Method in Treatment of Acute Middle-Ear Disease. A. Wiener, New York.
117 Surgical Postures. (Continued). M. W. Ware, New York.
118 Congenital Absence of Appendix and Suppurative Pelvic Peritonitis in a Boy. I. S. Haynes, New York.

Journal of Mental Pathology, New York.

May.

119 Softening of the Genu Corporis Callosi. A. Giannelli, Rome.
120 Progressive Chronic Chorea. R. Bonfigli, Rome.
121 Resuscitation of Electrocuted Animals. L. G. Robinovitch, New York.

Interstate Medical Journal, St. Louis.

May.

122 Renal Calculus. W. M. Robertson, St. Louis.
123 Water Supplies of the Philippines. J. D. Long, U. S. P. H. and M.-H. S.
124 Case of Tubal Abortion. O. H. Elbrecht, St. Louis.
125 Peyer, His Life and Works. A. E. Taussig, St. Louis.

Journal of the Arkansas Medical Society, Little Rock.

May 15.

126 The Mastoid Operation. H. Moulton, Fort Smith.
127 Asphyxia Neonatorum. E. H. Winkler, DeWitt.
128 Cases of Conservative Surgery. H. C. Dunavant, Osceola.
129 The Practice of Medicine. E. Bentley, Little Rock.

Louisville Monthly Journal of Medicine and Surgery.

May.

130 Appendicitis. L. Frank, Louisville, Ky.
131 Diagnosis of Renal Function. B. F. Zimmerman, Louisville.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

May 25.

1 *Heart Disease in Relation to Pregnancy. G. F. Blacker.
2 *Effects of Diet on Development and Structure of Uterus. M. Campbell.
3 Case of Sudden Death at Climacteric. E. Pratt.
4 Note on Use of Blunt Hook. J. E. Godson.
5 Extrauterine Pregnancy. J. N. Stark.
6 *Micro-organism Isolated from Acute Rheumatism. E. W. A. Walker.
7 Case of Retropharyngeal Fibroma. N. B. Odgers.
8 Epithelioma of Larynx in Young Man. H. Barwell.
9 Wandering Spleen. A. J. Lewis.
10 Delayed Chloroform Poisoning. R. Ramsey.
11 Unnoticed Lateral Curvature. W. F. Somerville.
12 Tubercle and Erysipelas. C. B. Whitehead.

1. **Heart Disease in Relation to Pregnancy.**—Blacker says that the view that increased work is thrown on the heart during pregnancy, while probable, has not been proved. During gestation there is probably an increase in the total amount of blood in a woman's body and an increase in the respiratory changes occurring in the placenta. There is also a necessity for getting rid of an increased amount of waste material produced partly by the mother and partly by the fetus. While this is so, much of the strain, Blacker thinks, is thrown on the right side of the heart, as well as on the left side, and can not, therefore, be taken as complete proof of the occurrence of hypertrophy of the left ventricle during gestation. He thinks that the old idea that the heart normally hypertrophies during pregnancy is not proved beyond doubt. In some cases hypertrophy of the heart is the chief change occurring, while in others there is hypertrophy of the left ventricle and dilatation of the right heart. In some healthy women neither hypertrophy nor dilatation occurs. There are, he says, no characteristic changes in the pulse of pregnant women. In cases of pregnancy complicated by heart disease, the risk of cardiac failure is to be guarded against. If after delivery there are signs of over distension of the right heart, Blacker recommends encouraging postpartum hemorrhage or even performing venesection. With regard to forbidding the patient with heart disease to marry, Blacker takes a moderate course. He thinks the majority of women with cardiac disease pass safely through pregnancy and confinement. If the patient's heart disease is compensated and there are no symptoms, she may marry. Cardiac failure probably will occur sooner or later, whether she becomes pregnant or not. It may be precipitated, but it is doubtful whether the risk is sufficiently great to justify the physician in denying her the right to marry.

2. **Effects of Diet on Development and Stricture of Uterus.**—An investigation was undertaken by Campbell to determine what changes, if any, were produced in the development and structure of the uterus by various diets. The animals employed were rats. Macroscopic and microscopic examination was made of the uteri of 86 animals; the tissue being removed as nearly as possible from the same area in each. One series was fed on an exclusive milk diet; another was fed on bread soaked in milk; a third series was put on a rice diet; a diet of porridge or oats was given another series, and a fifth series was put on a raw meat diet. He arrived at the following conclusions: 1. The use of non-physiologic diet such as exclusive flesh, rice or porridge, induces in the majority of cases a modification in the structure of the uterine mucous membrane. This modification consists in a diminution in the number of the large connective tissue cells. 2. Animals fed from weaning on an exclusive flesh diet showed the most profound structural changes of the uterus. In such animals the development of that organ was also most interfered with. 3. The structural change in the flesh-fed animals is associated with sterility. Campbell believes that from his experiments, it is evident that the food factor is one worth considering in dealing with the question of the falling birth rate.

6. **Micro-organism Isolated From Acute Rheumatism.**—Walker states that as a result of his researches, carried on in connection with Beaton, he has isolated a micro-organism for rheumatic cases, which he calls the *Micrococcus rheumaticus*. The organism which they isolated was capable, he claims, of producing in animals the morbid lesions of acute rheumatism. Four points of apparent difference between this organism and other streptococci were, first, a greenish-brown discoloration produced in a blood agar culture, apparently due to a reduction of hemoglobin to hemochromogen; second, the growth obtained on using Marmorek's test; third, the faculty of growing on very alkaline media, and fourth, the production of considerable quantities of acid and its rapid hemolytic action on red blood corpuscles. While he does not consider the case in favor of the *Micrococcus rheumaticus* as proved, he sees no reason for abandoning positive results in favor of negative evidence.

The Lancet, London.

May 25.

13 Abdominal Diseases Associated with Disease of the Testicle. W. Osler.
14 *Lesions of the Trigeminal Nerve. J. H. Parsons.
15 *Torsion of the Testis. H. M. Rigby and R. J. Howard.
16 Hypopharyngoscopy. P. T. Hald.
17 Cases of Pulmonary Regurgitation. D. B. Lees and V. Z. Cope.
18 *Acute and Chronic Appendicular Pain. S. Bonnet.
19 An Acute Infectious Condition (Glanders?). H. T. Marrable.
20 Case of Aberrant Functional (?) Chronic Intestinal Obstruction. G. S. Thompson.
21 Case of Melena Neonatorum. J. B. Page.
22 Criticism of the Mode of Administering Public Health Acts in England. J. H. Garrett.

14. **Lesions of Trigeminal Nerve.**—In discussing herpetic and allied affections of the cornea, Parsons states that there

is good reason to believe that ophthalmic herpes is dependent on definite lesions in the Gasserian ganglion, which morphologically is a dorsal-root ganglion. Herpes zoster is the outcome of an intense and concentrated attack on certain dorsal-root ganglion. Herpes febrilis and similar affections of the cornea, he thinks, may reasonably be regarded as a less acute and more widely diffused attack of a similar nature. Even though our views as to the site of the lesion are accurate, there still remains the extremely difficult task of explaining its manifestation. Sensory nerves are commonly supposed to convey afferent impulses only, and this, Parsons says, makes it difficult to imagine how even an inflammatory block in the course of the nerve can produce pathologic changes in structure at its distant termination. He claims that there is some experimental evidence of the transmission of impulses along sensory nerves, in a direction opposite to that of normal impulses.

15. **Tortion of the Testis.**—Rigby and Howard give the result of their examination of nine cases of torsion of the testis. They think the predisposing cause is a congenital abnormality of the attachment of the testis to the spermatic cord; the exciting cause is not positively known. In some cases, no cause of any kind could be discovered, the condition occurring with the patient in bed and asleep. The onset of the symptoms was always sudden and the severity depends on the tightness of the twist. Vomiting is an early and frequent symptom. The result of torsion usually is atrophy of the testis affected. In treating the condition, two stages must be considered, the treatment of the attack, and the prevention of further attacks.

18. **Acute and Chronic Appendicular Pain.**—For reasons, which he gives at length, Bonnet concludes that there are good reasons for the restriction of the surgical treatment in cases of appendicular pain. He believes that the tendency to resort more frequently to medical methods is justified, bearing in mind always the great advantage of surgical treatment in special cases. These special cases he describes in full.

Medical Press and Circular, London.

April 24.

23 Nervous Diseases. W. Carter.
24 *Treatment of Tuberculosis by Marine Climates. W. Ewart.
25 Abdominal Colpopexy. Jacobs.
26 Extrauterine Pregnancy. F. B. Jessett.

May 1.

27 Glaucoma. A. H. Benson.
28 *Cerebrospinal Meningitis. W. B. Warrington.
29 Treatment of Tuberculosis by Marine Climates. W. Ewart.
30 Ruptured Ovarian Cyst (Malignant), Generalized Peritonitis. F. B. Jessett and J. H. Evans.

May 15.

31 Climacteric Floodings. A. J. Smith.
32 *Ocular Headaches. R. P. Brooks.
33 Intubation of Larynx in Laryngeal Diphtheria. C. B. Ker.
34 Symptoms, Treatment and Sequelæ of Non-Malignant Duodenal Ulcer. D'A. Power.
35 Treatment in Inoperable Cancer. J. A. Shaw-Mackenzie.

May 22.

36 *Treatment of Pneumonia. J. Barr.
37 Operative Treatment of Inflammatory Diseases of Uterine Appendages. A. E. Giles.
38 Medicolegal Definition of Insanity. C. H. Sers.
39 Splint for Local Application of Continuous Heat. J. F. H. Dally.

24. This article also appeared in the British Medical Journal April 27, 1907.

28. **Cerebrospinal Meningitis.**—Warrington discusses the relation of cerebrospinal meningitis to other forms of meningitis. Whether a case is really one of meningitis or not, he thinks, can only be answered by a knowledge of general medicine aided by the findings of lumbar puncture. The latter procedure also determines the form of meningitis. Warrington is of the opinion that persons affected with this disease should be isolated, even though the direct contagion is probably no greater than in pneumonia. He would disinfect the secretion and advises those engaged in nursing to apply an antiseptic lotion to the nasopharynx.

32. **Ocular Headaches.**—Brooks thinks that the principal eye conditions giving rise to headache, are errors of refraction throwing an excessive amount of work on the ciliary muscles, a want of balance between the external muscles of the globe and what he calls retinal hyperesthesia. He describes various methods for determining which of these conditions is present.

36. **Treatment of Pneumonia.**—Barr believes that in the treatment of pneumonia the temperature affords a reasonable point of attack, as he strongly favors an increased dissipation of heat. He suggests that, when possible, the patient should have a warm bath, with plenty of soap, or if this be impracticable, he should be well washed, and the action of the skin encouraged by the administration of a diaphoretic. Should the temperature rise as high as 104 F. the sooner a large ice bag is applied to the abdomen the better. Promptitude of action in the early stage, he claims, often arrests the spread of the disease and may even arrest its further progress. With regard to venesection, he has no doubt that in some plethoric cases it does good, but it never should be adopted after the first forty-eight hours, and never at any time if the pulse is small, feeble and compressible. Bleeding, he says, should not be performed on the very young, the old or the debilitated. After bleeding, the patient should abstain from fluid for several hours. He urges particularly the need of good ventilation. The sick room should be the best in the house and, if possible, should contain at least 1,000 cubic feet of air for each occupant. The whole air of the room should be changed three times every hour. The administration of oxygen in cases where the sick room ventilation is poor and insufficient he believes to be unscientific, irrational and absurd. The temperature of the room should be maintained at from 60 F. to 65 F. At this temperature, Barr says, the air is not saturated with moisture; it is capable, therefore, of holding the patient's exhalations, and there is not much danger of him drowning in his own excretions. Speaking of the bronchitis kettle, he says the man who invented it should have been hanged, as he thinks death from strangulation would be a just punishment for the number of deaths from drowning which his appliance has caused. The bed clothing of the patient should be sufficiently light to allow free escape for the evaporation of the sweat. The room should be well-lighted and cheerful.

Semaine Médicale, Paris.

40 (XXVII, No. 20, pp. 228-240.) *Histopathologic Diagnosis of Affections of Liver and Spleen. (Diagnostic des maladies du foie et de la rate.) F. Schupfer.
41 *Lesions in Suprarenals in Course of Nephritis. (Lésions surrénales dans les néphrites.) E. Beaujard.
42 New Organization of Military Sanitary Service in Germany. (Service de santé de l'armée allemande en campagne.) Commenced in No. 18.
43 (No. 21, pp. 241-252.) Case of Congenital Atony of the Muscles. (Maladie d'Oppenheim.) A. Baudouin.

40. **Histopathologic Differentiation of Affections of Liver and Spleen.**—Schupfer uses a special hollow needle about 8 cm. long, with an external diameter of from 1.8 to 2 mm. The tip is cut slanting and the walls of the needle taper at the tip to a sharp cutting edge. This needle is inserted into the liver or kidney tissue, with mild aspiration from a glass syringe, kept up while the needle is being withdrawn. This excises a plug of tissue about 1 mm. wide and from 1 to 2 cm. long. Sections of the portion thus obtained enabled him to differentiate thrombosis of the portal vein from cirrhosis of the liver, cirrhosis with hypertrophy from secondary bile cirrhosis, and syphilitic lesions from primary tumors in liver and spleen. The technic also proves useful for exploration of the liver in hard drinkers before giving chloroform. In Banti's disease it permits inspection of the condition of the liver when considering the advisability of splenectomy or the ultimate results years after removal of the spleen, and also renders valuable service in suspected metastases in the liver. It can also be used on tumors elsewhere than in the liver or spleen.

41 **Suprarenals in Nephritis.**—Beaujard regards the suprarenals as practically each two organs, the cortical substance with its antitoxic action, and the medulla with its secretion of chromophil substance. The general intoxication resulting from a kidney affection entails in time hyperplasia of the cortical substance, while hypertrophy of the medulla is one of the consequences of the hypertrophy of the heart accompanying the nephritis.

Berliner klinische Wochenschrift.

44 (XLIV, No. 15, pp. 417-460.) Transplantable Rat Carcinoma. (Transpl. Rattencarc.) L. Michaelis and C. Lewin.
45 Appearance and Neurologic Significance of Medullated Nerve Fibers in Human Retina. (Markhaltige Nervenfasern in der Netzhaut.) M. Bernhardt.
46 *Abdominal Section without Tendency to Subsequent Hernia. (Bauchschnitt ohne spätere Hernienbildung.) A. Dührssen.
47 Clinical Significance of Periodical Return of Irregularity of Pulse Under Digitalis. (Digitalis-Allorrhythmie.) L. F. Dmitrenko. Commenced in No. 14.
48 Cardiac Defects. (Herzfehler.) Hirsch (Nauheim).
49 *Balneologic Treatment of Tardy Manifestations of Gonorrhea. (Gon. Späterkrankungen.) J. Siebelt.
50 Physical Treatment of Nervous Diarrhea. (Nerv. Diarrhoe.) E. Tobias.
51 *Benefits of Hot Mud Baths in Chlorosis. (Bleichsucht und heisse Moorbädern.) L. Steinsberg.
52 *Efficacy of Roentgen Treatment in Chronic Bronchitis and Bronchial Asthma. (Behandlung der chron. Bronchitis nach T. Schilling-Nürnberg mittelst Roentgenstrahlen.) Immelmann.
53 *Electric Belt for Mud Baths. (Elekt. Moorgürtel.) I. Nenadovics (Franzensbad).
54 *Functional Diagnosis and Treatment of the High Blood Pressure in Arteriosclerosis and Chronic Kidney Affections. (Hoher Blutdruck bei Art. und chron. Nierenleiden.) Gräupner.
55 Indications for Mud Baths in Chronic Kidney Affections. (Moorbäder bei chron. Nierenerkrankungen.) A. Loebel.

46. To Avoid Tendency to Hernia After Abdominal Section.—After trying various technics, Dührssen has returned to Lennander's as the safest and best. The incision is made through the various layers of the abdominal wall at overlapping points, only the cutaneous incision being on the median line. He gives several illustrations of the technic and describes his favorable experiences with it in twenty cases in which the conditions threatened trouble later. All tendency of the kind was averted by using this technic.

49. Late Gonorrheal Manifestations and Balneology.—Siebelt advocates very hot mud baths for late gonorrheal joint affections, with massage. Some cases resist all treatment, but, as a rule, benefit is promptly realized. He adds parenthetically that possibly there may be a gonorrheal basis for some of the joint affections commonly ascribed to rheumatism. Fine results were obtained in gonorrheal catarrhal affections of the female genitalia by pine-bark baths, associated with prolonged irrigation kept up during the bath, exerting a mild massage of the parts. The pine-bark baths are prepared fresh each time, the chemical constituents losing some of their properties by keeping.

51. Hot Mud Baths in Chlorosis.—Steinsberg regards chlorosis as essentially a gynecologic affection, probably referable to the ovaries. Hot mud baths seem to exert a specific action on the ovaries, and hence are theoretically indicated in chlorosis. His experience has confirmed the correctness of this assumption, as he relates in detail.

52. Roentgen Treatment of Chronic Bronchitis.—In THE JOURNAL December 1, 1906, page 1861, was mentioned Schilling's favorable experience with systematic Roentgen-ray treatment of chronic bronchitis and bronchial asthma. Immelmann reports a series of ten patients treated by Roentgen-ray with remarkably fine results. The asthmatic attacks were aborted and relief was almost immediate. He exposed the front, back and sides of the thorax in turn, a total exposure of ten minutes. Asthma due to cardiac or nervous factors is not amenable to this treatment, which seems to have a specific action on the bronchitic element.

53. Electric Belt for Mud Baths.—The mud baths at Franzensbad are said to contain sulphuric and other acids. A galvanic current is generated when the person stepping into the bath wears a belt containing strips of zinc, connected by a wire with strips of copper at the wrist or elsewhere. The electricity seems to enhance the medicinal action of the mud bath, judging from the experiences related.

54. Functional Diagnosis of High Blood Pressure.—Gräupner ascribes the high blood pressure in nephritis to a regulating process in the effort of the organism to restore normal conditions. In arteriosclerosis the high blood pressure is due to mechanical factors. It is frequently possible to reduce the blood pressure in these cases by baths and gymnastic exercises, and this relieves the heart and enables it to do better work. He has devised a method to determine the actual functional capacity of the heart, aside from the clinical findings. It is based on the fact that the blood pressure is regulated according to an absolute physical law when the individual is performing a certain given work. The behavior of the blood pressure during this work is a positive index of the functional capacity of the heart. He is inclined to accept disturbances in metabolism and blood affections as important factors in functional weakness of the myocardium, even with existing myocarditis.

Centralblatt f. Gynäkologie, Leipsic.

Last indexed, page 1906.

56 (XXXI, No. 15, pp. 401-424.) Effect of Injection of Placental Elements into Animals of the Same and Other Species. (Einverleibung placentarer Bestandteile.) R. T. Frank (New York).
57 *Cologne Water for Simplified Hot Water-Alcohol-Sublimate Disinfection of the Hands. (Desinfektion der Hände.) E. Ekstein.
58 *Treatment of Primary Vaginal Cancer. (Scheidenkrebs.) J. Jacub.
59 (No. 16, pp. 425-464.) Operative Correction of Chronic Inversion of Uterus. (Inversio ut. inveterata.) O. v. Herff.
60 Etiology of Inversion of Uterus. (Puerperale Uterus inversion.) H. Fritsch.
61 Large, High Rectal Fistulas. (Mastdarmfistel.) O. v. Herff.
62 Are There Male and Female Ova in Woman's Ovaries? (Männliche und weibliche Eier im Eierstocke?) A. Sippel.
63 Catheter with Stopcock. (Katheter mit Bügelhahn.) Dedolph.
64 Medicolegal Questions in Obstetrics and Surgery. (Rechtliche Fragen in der Geburtshilfe und Chirurgie.) Füth, Kölliker and Galli.

57. Simplified Technic for Disinfection of Hands.—Ekstein announces that Cologne water is an effective solvent of corrosive sublimate and other ordinary disinfectants, while it answers the purpose of alcohol, and thus simplifies and improves the technic for disinfection of the hands. After the hands have been thoroughly scrubbed with soap the Cologne water containing the disinfectants in solution can be applied to them, and, as the alcohol evaporates, the disinfectants are left on the hands as in ordinary hot water-alcohol-bichlorid disinfection, while the skin is not affected by the procedure as with the latter technic. The whole process is much less cumbersome.

58. Primary Vaginal Cancer.—Jacub reports two cases. The patients were 44 and 57 years old and had borne children, but had been widowed fifteen years before. The tumor in each case was in the rear wall and was readily reached by a perineal incision. With this technic the tumor did not come in contact with the wound and the removal of the entire vagina was not difficult. There was not much hemorrhage, and the extirpation of the uterus was facilitated by the ample access allowed. There has been no recurrence during the eighteen months since in one case, and the vagina is approximately normal in shape and size, although bare of mucosa. He was able to leave a strip of mucosa on the anterior wall in each case.

Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed, page 1643.

65 (LXV, No. 5, pp. 519-642.) *Pathology of Dystrophic Form of Congenital Partial Giant Growth. (Riesenwuchs.) E. Wieland.
66 Metabolism in Case of Alimentary Intoxication. (Stoffwechsel bei alimentaren Intoxikationen.) L. F. Meyer.
67 *Acute Leukemia and Tonsillectomy. (Leukämie und Adenotomie.) F. Stirniman.

65. Partial Giant Growth.—Wieland concludes his study of the pathology of this condition with the statement that attempts at compression to restrain the growth do no good. If function is seriously hindered, surgical measures may become necessary and they have always proved successful. They should not be advised, however, in the early stages to check further development of the acromegaly, as they do not seem to arrest the tendency to excessive growth in the part.

67. Acute Leukemia and Removal of the Tonsils.—Stirniman describes the case of a child of 3, never very healthy. Symptoms then developed suggesting possible leukemia, but without tumefaction of spleen and liver or enlargement of glands. The tonsils were enlarged and were removed about two months after the first symptoms, and this operation was followed by severe acute leukemia, fatal in nine days. He thinks that

the tonsillectomy was a serious operation under the circumstances. He has found in the literature records of two similar cases.

Monatsschrift f. Geb. und Gynäkologie, Berlin.

Last indexed, page 1068.

68 (XXV, No. 5, pp. 571-784.) *Long Duration of Gestation. (Spätgeburt.) B. S. Schultze.
69 What Has Been Accomplished in the Line of Disinfection of the Hands. (Händedesinfektion.) W. Cohn.
70 *13 Cases of Pubiotomy. (Pubiotomie.) K. Preller.
71 *Ovariotomy in Pregnancy and the Puerperium, (Ovariotomie.) O. Retzlaff.
72 *Forty-five Childbirths After Vaginofixation. (Geburten nach Vag.) A. Haupt.
73 Backward Displacement of Uterus in Last Months of Pregnancy. (Retroflexio uterl.) Lange.
74 Progress in Hematology During Last Ten Years. (Hämatologie.) Wolff. Concluded.

68. **Duration of Pregnancy.**—Schultze discusses the German law which accepts in questions of paternal responsibility a duration of pregnancy of 181 to 302 days before the birth of the child. He thinks that this is ample allowance for the duration of pregnancy, erring, possibly, on the side of too great latitude, as even 285 days is an unusually long period for gestation.

70. **Pubiotomy**—Preller states that consolidation was perfect only in two of his thirteen patients after pubiotomy. In the others there was still some movability of the parts a year after the operation, but not sufficient to interfere with walking. The pelvis was never permanently enlarged more than 0.5 to 0.75 cm., but later childbirths in the same women were accompanied by a loosening up of the consolidation which rendered delivery easier. The patients generally complained that they became fatigued more readily and had pain on the side operated on when doing heavy work; they had no disturbances with ordinary light work. In one case the pelvis was moderately contracted and the child was exceptionally large, measuring 42 cm. around the shoulders and weighing, without the brain, 4,590 gm. The disproportion was therefore abnormally great; if this had been known beforehand pubiotomy would not have been attempted. In this inability to determine beforehand the proportions between the size of the pelvis and of the child lies the greatest danger of pubiotomy. It should never be attempted except when there is a prospect of delivering a viable child. If the child dies during or soon after delivery, the operation was unnecessary. In the above case the vagina ruptured up to the wound in the bone and the mother succumbed to infection. In two of the first five cases the bladder was injured during the pubiotomy, but in none since then. Traumatic paralysis of the bladder was observed in one of these cases, and it still persists. The greatest danger for the future of pubiotomy is that too much latitude will be given to indications. The difficulties increase with increasing disproportion between the size of the pelvis and of the head.

71. **Ovariotomy in Pregnancy and Childbed.**—Retzlaff describes a few cases from his own experience and summarizes those that have been published since 1905. An ovarian tumor which may not have caused any symptoms during pregnancy or parturition may be so injured by the compression that it may become inflamed and suppurate during the childbed and induce chills and fever. As there was no suspicion of a tumor, the tumefaction then palpated is more liable to be taken for a parametritic exudate than for an ovarian tumor. Torsion of the pedicle occurs more frequently after the child is delivered than before. In one of the cases reported the discovery of the ovarian tumor and of placenta prævia, with obstruction to delivery, compelled intervention. During the attempts to push the ovarian tumor out of the way it burst. The ovary was removed immediately after delivery of the child, but no traces of its contents could be found. They had evidently been absorbed by the peritoneum and no signs of reaction on the part of the peritoneum were observed then or later.

72. **Childbirths After Vaginofixation.**—Haupt reviews a series of 35 cases of pregnancy after vaginofixation. Seven are from his own experience and the others from nearby clinics. Including 19 from an earlier series, his statistics comprise 45 cases of gestation after vaginofixation with premature delivery in only 2.2 per cent. Artificial intervention was required in only 2.2 per cent., and in these nothing but the introduction of the metreurynter. The uterus retained its corrected position after delivery in every instance. Kleinwächter estimates at 9.82 per cent. the proportion of premature deliveries after the Alexander-Adams operation. Haupt concludes his review with the statement that he knows of no instance of actual danger to mother or child from the results of low vaginofixation.

Münchener medizinische Wochenschrift.

75 (LIV, No. 15, pp. 713-760.) Endocardial Friction Sounds. (Endokardiales Reibegeräusch.) R. Geigel.
76 Waning Elasticity of Aorta with Incipient Arteriosclerosis. (Elastizität der Aorta, etc.) J. Strasburger.
77 Favorable Results of Suction Therapy in Forty Cases of Mastitis. (Mastitis und Bierssche Stauung.) P. Zacharias.
78 *Treatment of Anthrax. (Milzbrand.) Barlach.
79 *Determination of Carbohydrates in Urine. (Kohlehydraten im Harn.) R. Grünewald.
80 Oxalic Acid Poisoning as Factor in Polyneuritis of Fowls and Beriberi. (Oxalsäurevergiftung.) G. Maurer.
81 What Can the General Practitioner Do for the Relief of Cripples? (Linderung des Krüppelelends.) F. Lange. Commenced in No. 14.

78. **Treatment of Anthrax.**—Barlach has become convinced that the spread of the anthrax bacilli from the original focus is promoted by the pressure from the swelling. This forces the bacilli out into the surrounding tissues and spaces. He thinks that it is of the utmost importance to incise the pustule early and not let it become tense and hard. He also strives to prevent the dissemination of the germs by surrounding the focus with a deep groove made by applying the actual cautery around the periphery of the pustule, burning a circle of holes. He incises the pustule with a sharp knife and injects tincture of iodin in a ring around the pustule, about 5 to 10 cm. from its base. If there is much erysipelas he injects the iodin more freely, repeating possibly the next day. If there is considerable hemorrhage when the pustule is incised, so much the better, he thinks. He also incises wherever there is much edema, to evacuate the fluid and the toxins contained in it. He then dresses the pustule and the edematous and erysipelatous regions with a solution of bichlorid of mercury and, if necessary, completes the treatment by injections of camphor and brandy. The whole treatment requires only a few minutes, and the results, he states, are always good. The course of the affection is shortened by this method of treatment. He ascribes a specific action to the tincture of iodin. He has noticed that general symptoms coincide with the development of hardness and tension in the pustule, and that early relief from pressure in the focus results in the complete subsidence of the commencing general symptoms.

79. **Determination of Carbohydrates in Urine.**—Grünewald describes a technic with which, he says, even traces of the various sugars in the urine can be detected. Exactly 10 c.c. of urine are mixed with 1.2 gm. of sodium acetate, dissolved in 6 c.c. of warm distilled water, and 2 drops of acetic acid are added. Then 0.6 gm. of phenylhydrazin hydrochlorate are added and the whole is gradually heated and evaporated in the water bath to a residue of 5 or 6 c.c. of fluid, and then rapidly cooled. The yellow needles of the phenylglucosazon crystals are readily distinguished under a microscope magnifying 250 or 300 diameters, and differentiated from the brown glycuronates. The latter crystals melt at 153 C., while the crystals of phenylglucosazon do not melt under 206 C. In using the Lohnstein glycerin saccharometer he mentions that the glycerin always should be tested for a specific gravity of 1.25. To detect levulose, he heats to boiling point a mixture of equal parts of urine and resorcin, then warm, concentrated hydrochloric acid is added and the whole heated for a minute longer. A red tint is certain evidence of the presence of levulose. To detect pentoses, he dissolves 0.05 gm. orcin in 10 c.c. of 25 per cent. hydrochloric acid and then adds 1 c.c. of a 10 per cent. solution of ferric chlorid. To this mixture, 5 c.c. of urine are added and the whole is heated for 2 minutes, shaking constantly. In the presence of pentoses, a green color spreads through the mixture. The negative fermentation test and spectrum analysis confirm the findings of the test. The

test for pentoses can also be used for glycuronic acid by boiling with sulphuric acid to split the conjugate glycuronates. The polarization and fermentation tests can be used for control. A form of sugar may be found in the urine in cases of nervous irritability, when the filtered urine, after the removal of albumin and sediment, is rendered alkaline with a solution of sodium carbonate. It is then heated with a few drops of a solution of potassium sodium tartrate and bismuth tartrate for 2 or 3 minutes, cooled and vigorously shaken while 3 or 4 drops of chloroform are added. In case of the presence of this form of sugar, the upper edge of the precipitate of bismuth shows a distinct bright red in the course of an hour on standing.

Therapie der Gegenwart, Berlin.

Last indexed, page 1992.

82 (XLVIII, No. 1, pp. 1-48.) *Should We Treat Fever? (Sollen wir das Fieber behandeln?) F. Kraus.
83 Immobility of the Pupils in Hysteric Pseudo-epilepsy and in Syncope. (Klinische Mitteilungen.) F. Schultze.
84 *Diagnosis of Leukemia. (Leukämie.) Id.
85 *Treatment of Dropsy by Regulating Intake of Water and Salt. (Behandlung der Wassersucht.) O. Minkowski.
86 *When to Operate for Diabetic Gangrene. (Wann soll bei diab. Gangrän op. werden?) G. Klemperer.
87 Syphilitic Liver Fever. (Syph. Leberfieber.) Géronne.
88 *Active Plus Constriction Hyperemia in Gout. (Therapie der Gicht.) L. Alkan.
89 Constriction Hyperemia in Head for Seasickness. (Biersche Kopfstauung gegen die Seekrankheit.) J. Simon.
90 Tricycle in Place of Roller Chair for Invalids. (Dreirad als Krankenfahrzeug.) G. Hauffe.

82. **Shall We Treat Fever?**—Kraus concludes his historical sketch of the treatment of fever with the statement that moderate clinical measures to reduce fever are still the best means at our command in numerous febrile infections. This applies especially to influenza, to typhoid, and to the fever of tuberculosis and anemia.

84. **Diagnosis of Leukemia.**—Schultze comments on the paucity of communications in regard to Roentgen ray treatment of leukemia during the last year. He also discusses what he calls the absurdity of the terms "leukemia" and "anemia"—"white blood" and "no blood"—as exaggerations which frequently lead to the overlooking of the condition because it is not of such a pronounced type as to correspond to its exaggerated name. A healthy color of cheeks, lips and mucosæ is frequently observed in the first and middle stages of leukemia, even with pronounced enlargement of the spleen. The hemoglobin percentage may persist within normal range although the blood otherwise may present the typical leukemic findings.

85. **Treatment of Dropsy.**—If of cardiac origin, Minkowski gradually reduces the intake of water down to 1,200, 1,000 or 800 cc. a day, supervising the general health. Salt is likewise restricted to reduce thirst. Sometimes restriction of salt is of marked benefit. In true kidney dropsy, restriction of salt alone sometimes gives brilliant results. In other cases the benefit is not so prompt. Repeated weighing is the best way to supervise the effect of treatment. Restriction of salt is indicated whenever a nephritic finds his weight suddenly increasing, even although there may be no edema at the time. It usually soon develops. Tapping the edema not only relieves the patient, but removes a large amount of retained waste products at the same time. A milk diet gives too much water. Carbohydrates and fats—which spare the kidney—are more rational than two or three quarts of milk a day, throwing extra work on the kidneys. Heart tonics, he thinks, are indicated whenever cardiac incompetency becomes manifest, regardless of the condition of the blood pressure. Digitalis will sometimes reduce an over-high blood pressure—the cases of "high-pressure congestion."

86. **When to Operate for Diabetic Gangrene.**—Klemperer gives an illustrated report of several cases summing up the lessons he has learned from them in the statement that no operation should be done in case of gangrene of the extremities in a diabetic free from acidosis and albuminuria. On a strict antidiabetic diet, demarcation and sloughing off should be patiently awaited. The healing process should be promoted by dry powder dressings and occasional constriction hyperemia. On the other hand, in case of acidosis, amputation should be done at once, and high up, even when the local focus is small. The same rule applies also when there are pronounced signs of chronic nephritis.

88. **Hyperemia in Treatment of Gout.**—Alkan relates the details of two cases to illustrate the great benefits derived in acute gout from a combination of intermittent constriction hyperemia and hot cataplasms to the swollen toe, supplemented by stimulating the emunctories. The elastic band was applied above the ankle, and a hot cataplasm to the toe. The relief from pain was almost immediate. After two or three hours the constriction was removed, the limb raised and cold applied to the toe, to induce anemia. After two hours the hot cataplasms were resumed for the rest of the day. The patients were ordered to move about. Carlsbad salts were given internally, and in the evening hot drinks to induce sweating. In one case the gouty tophi could be felt crumbling under light pressure after a course of this treatment and the patient has been well for about eight months since.

Archivio per le Scienze Mediche, Turin.

Last indexed, page 1072.

91 (XXX, No. 5, pp. 453-550.) Regeneration of Nerve Fibers. (Rigenerazione delle fibre nervose.) A. Perroncito.
92 Hardening of Human Hairs Under Artificial Digestion. (Corneificazione dei peli.) S. Giovannini.
93 Processes of Repair in Experimental Wounds of the Spleen. (Ferite della milza.) G. Baggio.
94 *Question of Ascending Tuberculous Infection in Urinary Apparatus. (Infezione tub. ascendente?) R. Giani.
95 *Secretory Processes in Hypophysis of Mammals. (Ipofisi dei mammiferi.) A. Gemelli.
96 Primary Angiomata of Striated Muscles. (Emangioma cavernoso del musculo soleo.) M. Donati.

94. **Impossibility of Ascending Tuberculosis in Urinary Apparatus.**—Giani states that the results of his experimental research confirm the assumption that with the normal secretion of urine it is impossible for tuberculous infection to spread upward against the current.

95. **Secretion of the Pituitary Body.**—Gemelli's experiments on animals and study of the hibernating marmot have convinced him that the pituitary body has a marked antitoxic action, supplementing that of the thyroid and suprarenal glands. He theorizes to explain the mechanism of this action to correspond with the anatomic findings.

Gazzetta degli Ospedali, Milan.

Last indexed, page 1824.

97 (XXVIII, Nos. 3-9, pp. 17-96.) *Calcium Salts and Liver Substance in Treatment of Epilepsy. (Epilessia e sali di calcio.) T. Silvestri.
98 *Toxi-infectious Origin of Chronic Inflammation and Enlargement of Prostate. (Prostatite cron. e ipertrofia prostatica.) G. Li Virghi.
99 Modifications of Formed Elements of Blood in Experimental Tuberculosis. (Crasi sanguigna nella tub. exp.) G. Romanelli.
100 *Antibodies in Blood in Case of Echinococcus Cysts and Helminths. (Anticorpi echinococcici e anticorpi elmintiaci.) Ghedini.
101 Post-typhoid Myasthenic Syndrome. (Sindrome miastenica.) T. Prandi.
102 Second Case of Cirrhosis of Liver Treated by Omentopexy with no Recurrence During Year Since. (Cirrosi epatica curato coll' op. di Talma.) F. Bindi.
103 *Hemolytic Test in Case of Cancer and Leukemia. (Sensibilizzatrici nel siero di sangue, etc.) E. Tedeschi.
104 Enlargement of the Tongue. (Macrogiossia.) G. Marangoni.
105 *False Abdominal Tumors. (Falsi tumori add.) Bruchi.

97. **Calcium Salts and Liver Substance in Treatment of Epilepsy.**—Silvestri has previously called attention to the lack of lime in the organism as an important factor in the convulsions in eclampsia, tetany, etc., and in epilepsy. The proportion of lime in the blood is revealed by its coagulating properties, as fibrin ferment is an organic compound of lime. Besta found lesser coagulating power in the blood in 37 out of 45 epileptics examined, and other Italians have confirmed the evident relations between convulsions and deficiency of lime in the blood. Silvestri's experience confirms the assumption that lime has a preserving and rejuvenating action on the nerve tissue, and especially on the cortex of the brain. He believes that its action in moderating the condition of hypertension in the brain and the composition of the blood in general has a favorable influence on the digestive and other functions of the body. Calcium salts in the test-tube have a remarkable action in increasing the digesting power of the pancreatic juice. He is convinced that altered functioning of the liver is responsi-

ble in large measure for the convulsions in eclampsia and for epileptic seizures, as he explains in detail. For this and other reasons which he enumerates, he recommends treating epileptics with liver substance. This supplies the missing liver elements while it also supplies the lacking calcium salts, as the livers of young animals contain them in large proportions. He is convinced that the reduced coagulating power of the blood in epilepsy is the result of perverted functioning on the part of the liver, one of whose tasks is to transform the lime circulating in the blood in such a way that it can readily be utilized by the organism in maintaining normal conditions of coagulation. The liver stores up the calcium and then dispenses it as needed. In epilepsy this functioning is defective, and the unutilized calcium is cast off from the body in the urine, while the nerve tissues suffer from lack of calcium.

98. **Toxi-Infectious Origin of Inflammation and Enlargement of the Prostate.**—Li Virghi found the colon bacillus alone in 60 cases of prostatitis and associated with other germs in 65 others, all with gonorrheal antecedents. In 38 others without gonorrheal antecedents the colon bacillus was present in all but 6, and in these cases the prostatic affection had healed under treatment. He summarizes his conclusions from this and other clinical experience in the statement that chronic prostatitis is invariably a mild toxi-infection of the prostate due to the colon bacillus. Enlargement is the final outcome of the chronic inflammation. The result of the toxi-infection is a slow sclerotic process, and the only means of arresting it is by massage of the prostate, prostatic urethra and neck of the bladder. When not too far advanced this, he states, is liable to cure the chronic inflammation definitely and completely.

100. **Antibodies in Blood in Case of Echinococcus.**—Ghedini has found that the hemolytic blood test is able to reveal the presence of an echinococcus cyst in the body, possibly not discoverable by any other means. The antibodies were pronounced in the case of a lad of 13 with a large echinococcus cyst in the liver, while the test was always negative when serum from persons with various forms of helminthiasis was substituted. He is now studying the serum of persons with helminthiasis to determine whether it contains specific antibodies, and is experimenting to find means to preserve the echinococcus serum to use in testing other patients.

103. **Positive Findings with the Hemolytic Blood Test in Cases of Cancer and Leukemia.**—Tedeschi thinks that the positive findings which he obtained constantly with the hemolytic blood test have considerable practical importance in the diagnosis of cancer and leukemia. The hemolytic test was described in THE JOURNAL, Dec. 1, 1906, page 1832.

105. **False Abdominal Tumors.**—Tuberculous peritonitis was responsible for the formations in the abdomen simulating a tumor in the three cases described. Two of the patients were in apparently perfect health, which rendered differentiation difficult.

Norsk Magazin for Lægevidenskaben, Christiania.

Last indexed, page 1731.

106 (LXVIII, No. 4, pp. 345-452.) *Sodium Phosphate in Neurasthenic Conditions. (Fosforsurt natron ved neurasthenisk tilstande.) H. J. Vetlesen.

107 Three Patients with Gangrene of the Lungs Treated by Operation. (Lungegangræn.) A. Gundersen. (La Crosse, Wis.)

108 Triple Phosphate Crystals in the Cadaver. (Tripelfosfatkrystaller fundet i kadaver.) H. Hopstock.

109 *Congenital Cardiovascular Defects. (Medfødte hjertefeil.) O. Scheel.

110 Importance of Milk-Vegetable Diet. (Lacto-veg. diæt.) E. Meinichen.

111 Rupture of Bladder. (Ruptura vesicæ urinariæ.) O. Borchgrevinck.

112 Hemorrhage from Gastroenterostomy Wound. (Efterblødning.) Id.

106. **Sodium Phosphate in Neurasthenic Conditions and in Exophthalmic Goiter.**—Vetlesen has been proclaiming for some years the advantages of sodium phosphate in exophthalmic goiter. His later experience fully confirms his first assertions in regard to the efficacy of this remedy, which, he says, was first suggested by the success of organotherapy. He has now a record of 40 cases of exophthalmic goiter in which it has been applied. He tries it in every case and generally derives great benefit from it. His present article relates his experience with it in neurasthenic conditions. He gives the details of 6 out of 30 cases in which he has administered it in his private practice, while it has been given to hundreds at the hospital. No by-effects were observed, but the tonic action on the nervous system was striking in many instances. He adds that the drug is a welcome addition to the usual measures at our command in treating the protean manifestations of neurasthenia. The examples he gives show marked benefit under sodium phosphate administration and its harmlessness even when continued for months. He orders one tablespoonful four times a day of a solution of 15 parts sodium phosphate in 250 parts water.

109. **Patent Duct of Botallo.**—Scheel's first patient was a woman of 28 who had had a tendency to slight cyanosis of the periphery since childhood, and dyspnea on violent exertion. As she grew up the cyanosis became more pronounced while the diuresis decreased. The area of dulness over the heart was enlarged, extending upward to the second left costal cartilage with marked systolic thrill over the entire heart and a loud, prolonged murmur ending in an accentuated second sound. The patient succumbed to an attack of pneumonia. The mechanism of the defect and of the heart functioning is compared to the conditions in normal hearts, and in conditions in which, with enlargement of the pulmonary artery, the ascending aorta was unusually narrow, normal or dilated. In another case of congenital anomaly the patient was a four-weeks-old infant and the aorta and pulmonary artery were transposed.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their methods, or in the interest of our readers.

GYNECOLOGY AND ABDOMINAL SURGERY. Edited by Howard A. Kelly, M.D., F.R.C.S. (Hon. Edin.), Professor of Gynecologic Surgery at the Johns Hopkins University, and Charles P. Noble, M.D., Clinical Professor of Gynecology at the Woman's Medical College, Philadelphia. Illustrated by Hermann Becker, Max Brödel and Others. Volume I. Cloth. Pp. 851. Price, $8.00 net. Philadelphia and London: W. B. Saunders Co., 1907.

HYGIENE OF NERVES AND MIND IN HEALTH AND DISEASE. By August Forel, M.D., Formerly Professor of Psychiatry in the University of Zurich. Authorized Translation from the Second German Edition. By Herbert Austin Aikins, Ph.D., Professor in Western Reserve University. Cloth. Pp. 342. Price, $2.75. New York and London: G. P. Putnam's Sons, 1907.

SCIENTIFIC MEMOIRS. Preliminary Report on the Development of the Leishman-Donovan Body in the Bed Bug. By W. S. Patton, M.D., I.M.S. No. 27. Paper. Pp. 20. Price, 8 annas, or 9d. No. 28. The Sexual Cycle of Leucocytozoon Canis in the Tick. By S. R. Christophers, M.B., I.M.S. Paper. Pp. 12. Price, 12 annas or 1s. 2d. Calcutta: Government, 1907.

PULMONARY TUBERCULOSIS. Its Modern and Specialized Treatment. By Albert Philip Francine, A.M., M.D., Instructor in Medicine, University of Pennsylvania. Second Edition. Illustrated. Cloth. Pp. 266. Price, $2.00. Philadelphia and London: J. B. Lippincott Co., 1907.

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